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BULLETIN OF THE

TAYLOR SOCIETY, New York

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

Some Problems of Overhead Cost
John Maurice Clark

Hand to Mouth Buying
William O. Jelleme

International Aspects of Scientific Management
Charles de Freminville, Wallace Clark, Morris L. Cooke, Harold B. Butler, Stan Spacek, Conrad D'Angelo, Irene M. Witte, C. H. van der Leeuw, W. H. O'Neill Manning, Robert T. Kent, Henry S. Dennison

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The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure—for the common benefit of the community, the worker, the manager and the employer—understanding and intelligent direction of the principles of administration and management which govern organized effort for accomplishing industrial and other social purposes.

2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.

3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptation and application under varying and changing conditions.

4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, the worker, the manager and the employer.

5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective responsibility.

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Comment

IT IS commonly known that overhead costs is the outstanding problem among accountants, but it is not so commonly realized by executives that it is also one of their outstanding problems. "The allocating of overhead costs contains some of the most delicate problems of business policy," says John Maurice Clark in the first of the significant papers presented in this issue. There may be a difference, he says, between costs for which an order or lot may be *economically responsible,* and the costs which an accountant may charge to the order or lot. The executive must keep an eye on *economic responsibility* as having a bearing on policy.

THE accountant, as accountant, is interested primarily in the costs of that which has been done. The executive also is interested in such facts, but he is even more interested, as a problem of policy, in what would be the cost of doing something other than is being done. For instance, Professor Clark calls attention respectively to the relative significance of overhead in the economic or fundamental costs of extending operations beyond normal plant capacity, of undue extension of operations at the peak season by increase of facilities, and of increase of operations at off-peak seasons. His discussion gives light on the cost significance of regularization. It also suggests that, from the point of view of costs, the present habit of current buying, even though it brings problems of costs, may in the long run prove to be an advantage.

THE article on current or hand to mouth buying, by Mr. Jelleme, stimulated interesting discussion. All of the discussors agree that, while it will undoubtedly be subject to modifications, it is a habit that will endure and to which adjustments of managerial policy and procedures must be made. Professor Nystrom's mastery of the history of merchandising makes his discussion of the origin and development of the current buying habit particularly illuminating. Evidence that education of the retailer to buy little and buy often began as early as 1911, and is not a thing of sudden growth, gives strength to the judgments that it is a habit which will remain. It is not merely a result of the "consumers' strikes" of 1920, but as well of laws against price maintenance, education concerning retail selling costs, and scientific management. And adjustment to it, we may add, must be by way of scientific management — scientific management applied more intensively to procedures of enterprises as independent units and to procedures of enterprises as interdependent links in a processing and distributing chain.

WE are pleased to be able to present a statement by so competent an authority as M. de Freminville concerning Henri Fayol and his Doctrine Administrative. Fayol was a noble character, a great engineer and a successful administrator. His doctrine is a significant contribution to the science and the art of management, and has attracted much attention in France; so much, in fact, that there was organized some years ago an association of Fayolists—Centre d' Etudes Francaise. There is also in France an association of students of the Taylor doctrine, Conference de l'Organisation Francaise, of which M. de Freminville is president. Recently, we are happy to record, these two organizations have become associated in the Comité International de l'Organisation Francaise, which is in turn a Section du Comité International de l'Organisation Scientifique. France is, indeed, fortunate that her characteristic interest in scientific inquiry provided a common interest which inspired and promoted a union of these influential management societies.

THE article by M. de Freminville, the interesting account by Wallace Clark of his work and observations in Poland with the Kemmerer Mission, and the group of addresses on "International Evening," together emphasize the extent to which the doctrine of scientific management has become international. We have recently received a letter from Henry S. Dennison, now in Geneva, in which he expresses astonishment at the amount of printed matter concerning scientific management and the unanimity of acceptance of the theories in Europe. International cooperation in the development of a science of management must now take the form of world-wide analysis and comparison of experiences under varying social and industrial conditions. Organizations for such cooperation are in process of development. For years the French have been close students of management, have had their groups of Fayolists and group of Taylorites, and these groups, as M. de Freminville explains in his article, have joined for the study of doctrines and practices of management. The First International Management Congress at Prague in 1924 stimulated the interest of central and eastern Europe, which resulted in provision for future international congresses and in the organization of scientific management societies in half a dozen countries. "In Russia, Germany and Czechoslovakia, scientific management is the guiding principle of the national economic system." A second international congress was held in Brussels in 1925, and the third international congress is to be held in Rome in September, 1927. We hope that those Americans who are planning European trips this summer will so shape their plans as to be able to participate in the congress at Rome. We are able to give assurance that these meetings as organized and conducted in Europe yield more of pleasure and profit than can be imagined before or explained after the experience.

THERE has also been organized at Geneva an International Management Institute whose functions will be on an international scale analagous to those of national management societies with which we are familiar. It has been established under tripart auspices: the International Labor Office, International Committee on International Management Congresses and the Twentieth Century Fund of Boston, all of which institutions are represented in its directorate. Mr. Paul Devinat, formerly of the International Labor Office, is its director; Percy S. Brown, formerly of the Corona Typewriter Co., and President of the Taylor Society, is in Geneva for a period as technical attache. The objects of the Institute specifically are (1) "To provide facilities for personal contact between specialists and persons practically interested in problems connected with the rational organization of production and distribution, by offering opportunities for effective collaboration and for the exchange of useful information; (2) To make arrangements as it sees fit for a regular exchange of information and documentary material between the various national specialist institutions; (3) To study, in so far as its resources permit, all the problems connected with the rational organization of production and distribution and to give its support to all activities of a general interest pursued by the national institutions."

Some Central Problems of Overhead Costs[1]

An Inquiry Into Aspects of One of the Most Delicate Problems of Business Policy

By **JOHN MAURICE CLARK**
Columbia University, New York

Introduction

THE central problem of business is efficiency; and efficiency means getting the utmost amount of useful results out of the facilities used—the labor and materials, the physical plant, technical knowledge and commercial opportunities. It is essentially the getting of a maximum result in proportion to the expenditure of means. But the business measure of these quantities is financial, and efficiency in the business sense is gauged by a maximum surplus of income above cost. Thus value and cost become the well nigh universal measures of the useful results on the one hand and the expenditure of means on the other. They are the tests of whether a thing is worth doing: whether it is financially worth while to a business or economically worth while to the community at large. Are these tests accurate, as they are actually used? For present purposes I do not propose to raise the question whether the price a thing sells for is an accurate measure of its usefulness, or whether any other measure is possible. I shall confine myself to the other side of the question and ask whether costs, as they are commonly used, are an accurate measure of the expenditure of productive resources, for the purpose of solving the questions of industrial efficiency.

And one of the key points in such an inquiry is the proper handling of those costs which may be blanketed under the general term of "overhead." These are, in general terms, costs which are not specifically traceable to the doing or making of a particular thing. There are, however, different varieties of overhead costs, chiefly because there are different methods of tracing costs and assigning responsibility for them. Tracing may be by the methods of accounting, or by statistical methods of comparative analysis, or by the exercise of expert judgment, or by a combination of all three. All alike have their shortcomings: none gives a perfect picture. But even if it were possible to find the perfect measure of costs and to agree on it, there would still be an unavoidable dilemma. The whole business, or the whole productive process, must pay all the costs incurred or it does not meet the basic test of economic self support. But, since part of the costs are untraceable, any particular part of the business may be self-sustaining even though it does not contribute its full quota of overhead. The cost of the whole is greater than the separate costs of the parts, and the parts between them must make up the cost of the whole. But to say just how much any part of the business must contribute toward these untraced costs is arbitrary. The allocating of overhead costs contains some of the most delicate problems of business policy.

One of the most troublesome aspects of overhead costs consists in the fact that some of the costs do not vary much with variations in output. They are, in certain situations, at least, "constant," or relatively so. Whenever this is the case, it is a symptom of a more fundamental industrial fact. It means that some of the productive facilities for which expenses have been incurred have unused capacity. They can produce more than they are producing. The same railroad track can carry more trains, or the same building house more productive workers, or the same machine turn out more goods, or the same managing or selling staff can plan the production or carry out the sale of a larger output. And unused capacity is always "waste," even though sometimes it may be unavoidable. The efficiency of American industry is probably due in part to an unusually keen sense of unused capacities and an unusually urgent drive toward their utilization.

In pursuing this goal and endeavoring to utilize the unused capacities, the chief obstacle is represented by the question whether the result will be worth what it costs. If not, then it will be wasteful, idle capacity or no idle capacity. But what is its cost, in view of the dilemma of the allocation of overhead? Since cost may veto production, we need to be very sure that our measure of cost is correct for this purpose; otherwise it may become an obstacle to efficiency, in the guise of a safeguard to economy.

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[1] Paper presented at a meeting of the Taylor Society, New York, December 10, 1926.

We may note three levels at which this problem arises. The first is the level of business policy for a private enterprise, centering in the question of what will, and what will not, increase net earnings. This of course presupposes that the business man, in order to settle his questions intelligently, has some reliable knowledge about his costs. This opens up the problem at another and subsidiary level; namely, what is the technique of cost keeping and cost interpretation which is suitable to give the manager the information he needs for the solution of his questions of business policy? Finally, we shall find that there is a shifting of costs between business units; and this raises serious doubts whether, if each concern follows the policy which is most profitable for itself alone, the result will be the most efficient policy for the community which is made up of all the concerns taken together. If we could integrate this whole series of producers for the purpose of studying its costs, we should find that the behavior of the integrated costs is different from the average or typical behavior of the constituent enterprises; the proportion of constant costs being much increased by the integrated method of reckoning. Thus there is real need to raise the question of overhead in relation to the question of the efficiency of the business community as a whole or perhaps more broadly still, of the whole society.

I shall discuss the issues for the most part at the level of business policy. However, the discussion on this plane will have certain clear implications as to the narrower questions of accounting technique, and as to the broader issues of community efficiency, and these may also be briefly noted.

Questions of Business Policy

The issues may be exhibited in an extreme form by a type question; namely, does it ever pay to produce at a loss in order to avoid a larger loss which would arise from not producing? Granting the premises, the answer is clearly "yes." Suppose a plant can turn out 100,000 alarm clocks a year at a cost of one dollar each. A severe depression causes the management to consider the advisability of a temporary shutdown. It appears that depreciation, unavoidable maintenance and the holding together of a necessary nucleus of the force will involve expenses at a rate equivalent to $20,000 per year, even if no goods are turned out.[2] By spending $10,000 more, they can turn out 20,000 clocks, which might find a market at ninety cents each. This is less than "cost of production," even if a standard burden rate is used and the unabsorbed burden charged as a cost of idleness rather than as a cost of production. The total budget is: income, $18,000; expenses, $30,000; deficit, $12,000. But if the 20,000 clocks were not produced, the deficit would be $20,000 instead of $12,000; and it is better to produce at a "loss" than to stand idle.

Such cases do occur fairly frequently, though the conditions will always take a deal of scrutinizing before one is safe in concluding that such a policy will really avoid the greater loss. One must take into account the possibilities of disorganizing the market, precipitating cutthroat competition or bringing on other unforeseen long-run consequences of an unprofitable sort. But when a genuine case is found, it means that if these particular goods are *not* produced, the concern cannot thereby save the amount of the costs which its accounting system charges against them. Many of these costs will go on in spite of curtailed or suspended production; and it is better to produce and cover part of these constant costs than not to produce and fail to cover any of them.

Such production is profitable in one sense; not the usual business sense perhaps, but a perfectly valid one, nevertheless. It covers the costs for which it is economically responsible, as distinct from the costs which an accounting system might charge it with. It is economically responsible for the extra costs it occasions beyond what the costs would have been if this particular bit of business had not been taken on. The crucial thing here is not the absolute cost, but the difference between the cost of producing one million units of goods and the cost of producing eleven hundred thousand. For the sake of having some name for this quantity I have called it "differential cost." It is often (not always) of crucial importance in determining the lowest price at which it is better to take business rather than not to take it. Whenever the overhead is not being fully utilized—which is most of the time—differential cost is less than average costs; often a great deal less.

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[2] Throughout the remainder of this example, it is understood that the figures refer to output, income and cost *at a rate equivalent to* so much per year, though the period actually involved will probably be shorter.

One simple but far reaching fact about differential cost is that it varies, not merely with the present conditions in the plant, but according to the nature of the alternatives which may be under consideration. The extra cost per unit of producing ninety per cent of full capacity rather than eighty per cent will be one thing: the extra cost per unit of working at fifty per cent capacity rather than shutting down temporarily will be a different thing. The extra cost of the first ten per cent beyond normal capacity will be different again: and larger than either of the others. And the differential cost of producing rather than going out of business permanently and disposing of the realizable assets —this will be different from any of the others. It will be larger than any other differential cost except the swollen cost of driving a plant beyond its normal capacity. In other words, it takes a certain income per unit to justify a concern in continuing to operate in the long run. It takes less income to justify it in continuing production over a depression which is temporary, or in turning out a little added output to utilize a little spare capacity. Whenever business men make these kinds of judgments, they are impliedly dealing with differential costs, though they may not formulate the idea to themselves.

The central thesis around which the resulting problems group themselves is this: any bit of business which it is practicable to treat separately is worth taking if it covers anything more than its differential costs, even though the whole business cannot be carried on at such a level of prices and must, in the aggregate, earn more. In the past, the outstanding economic facts which have been treated in the books as illustrations of the working of this principle have been cutthroat competition, railroad discriminations and the dumping of goods in foreign markets. But these are only a few of its applications, and in the future probably the most far reaching of them will be the development of constructive policies for the stabilization of industry and business, utilizing unused capacities in a thousand ways and setting "idle overhead" to work.

First let us look for a moment at cutthroat competition. In the early days of railroads, steamships and other enterprises with large constant expenses, competitors were often trapped into a position in which they had a choice of evils: to cut prices until they failed to cover their overhead, or to lose business and fail to cover their overhead for that reason.

Here the principle of overhead costs worked destructively; so destructively that business was bound to find some remedy which would save it from itself. Pooling and trusts were remedies, but they went too far in the other direction, and the public voiced its opposition in no uncertain terms. The public has an interest in prices based on cost; prices which will cover the overhead, including a "fair return" on the investment for a "representative firm." If prices lose touch with this standard in an upward direction, that is exploitation. And if they lose touch with it in a downward direction, that is demoralization, and bound to produce a reaction. In accordance with this fact, one of the most general methods of safeguarding trades consists simply of the development of cost accounting systems which will charge the goods with enough overhead to act as a brake on tendencies to cutthroat price reductions.

But if, in accord with this idea, business makes it a rule to refuse to take any business which does not contribute its full quota of overhead costs, then it may lose chances to secure additional business which would be worth taking, and which would not involve it in cutthroat competition. The remedy may not be as bad as the disease, but it is too undiscriminating in its action, and business cannot develop its full capabilities until it substitutes a more elastic and progressive policy.

One way of utilizing the principle of overhead costs without slipping into the morass of cutthroat competition is found in the practice of discrimination. The keynote of this policy is to cut prices for additional business and additional business only, utilizing all the ingenious devices of classification to this end, preventing or trying to prevent existing customers from benefiting by the reductions, and the company from losing any of the profits it has been making out of their business. Then anything the new business contributes above its differential cost is clear gain. Where discriminaton is possible, prices can be cut to a far lower minimum level without demoralizing the trade. Some forms of discrimination, such as the classification of freight, are unquestionably reasonable. Others, such as spying on a competitor's trade and focussing an intensive attack on his customers and on them alone, are clearly unfair and contrary to good trade policy. Between lie practices of many tints and shades, some of which will make a permanent place for themselves and others of which will probably be outgrown as trade discipline grows stronger and standards of trade practice become more enlightened.

Those which merely serve to shift business from one competitor to another are of little or no help to productive efficiency; while those which develop new business may be of very decided service. But among the most useful are those which develop selected varieties of business which are of such a sort as to fill in just those off periods when capacity is partly idle, and make the curve of operation more regular. A conspicuous example is the policy of electric power utilities, which have built up their off-peak business and thereby enabled a given plant to render a larger volume of service. That general business can accomplish the same result at least in some cases is evidenced by the Dennison Company and other pioneers in regularization. But before this movement can realize its potentialities two things are necessary. One is a general realization of the possible gains, based on better utilization of overhead outlays. The other is the development, by experience and experiment, of a varied and effective technique, not confined to the relatively crude and limited incentives of price discrimination.

First, as to the possible gains. Absolute regularity in everything is not the goal. It is not attainable and would not be desirable. Human life proceeds in rhythms and does not thrive on a mechanical uniformity. Machines do thrive on it, and it has been the great growth of these mechanical servants of production which has focussed attention on the fact of overhead costs and on the wastes of idle overhead; and given rise to the modern theories and policies on these matters. But it is a curious and pregnant fact that the wastes of idle time are more serious for men than for machines, when irregular employment goes beyond the moderate degree of rhythmic change which men find natural and desirable. A man has to consume considerable fuel to keep him in a state of idleness, where a machine may simply be oiled and put away. There is less proportionate difference between the cost of keeping a man idle and at work than there is with a Ford. This is a vital fact in "community accounting."

In this connection there is one prevalent habit of mind among business men which they should, in their own interest, be led to reexamine and possibly to revolutionize. That is the habit of thinking of the peak business as the source of the greatest profits because the peak time is the time when the greatest profits accrue. In railroads, for example, a twenty-five per cent increase in business from March to October may almost double the net earnings. But does that mean that it would be profitable to cultivate a still higher peak and neglect the building-up of off-peak business? Far from it. Such a policy would call for added equipment, which would be needed for at most two months in the year, while the overhead costs on account of it would go on through all the months of the year, and the earnings might very probably fail to cover this additional burden for which the added peak business would really be responsible. At the same price, there is far more profit in building up off-peak business than in elevating the peak still higher.

Additional off-peak business is worth taking at anything above its extra cost: that is, until the price is so low or the special costs incurred in getting the business are so high that the margin between extra income and extra cost reaches the vanishing point. This is especially clear where it is possible to keep the new business separate from the old and give it special prices or a special development policy, or both. Otherwise the calculation takes a different form. More off-peak business lowers the average cost of all the off-peak business and justifies slightly lower prices, but not such radical cuts as might be made for new business alone. Or it justifies added costs of development, but not such large added costs per unit of aggregate business. On the other hand, additional business which is concentrated at the peak is not worth taking unless it covers, not merely ordinary overhead charges, but a considerable amount besides for idle overhead in the off-peak period.

Turning to the methods of developing off-peak business, price cutting has its uses, and also its dangers and limitations. So also has the method of working to stock. Advertising may develop new types of demand, or new uses of a commodity. New markets may be found with different seasonal peaks, even as far away as the southern hemisphere, where our seasons are reversed. But one of the most fruitful and adaptable methods consists simply in cooperation between concerns and their customers or clients, or with any parties who have a joint interest with them in greater regularization. Thus downtown offices may cooperate to spread out the rush hour of street car travel, railroads and shippers may cooperate in evening their shipments, manufacturers may cooperate with those who supply materials, to spread out their orders and receive in turn a greater assurance of having the orders promptly filled.

The relations of interdependence and common interest between different producers are growing almost daily. The present habit of hand to mouth buying may serve to reduce some of the extreme fluctuations which are bound up with the piling up of stocks in hopeful times and letting them shrink when depression comes in sight. But it also increases the dependence of business on being able to get its orders filled and its goods transported without delay when the orders do go in, and increases the seriousness of any failure, on the part of the railroads especially, to handle the peak. Thus it lays a greater responsibility on the roads to keep sufficient reserve capacity to ensure against car shortages and embargoes.

Questions of Accounting Technique

It is clear that "differential cost," or extra cost, is not an accounting quantity and cannot be: the books cannot show it directly and an accountant would have a justifiable brainstorm if asked to do so. It is the difference between costs under two sets of conditions, one of which is always different from the present and both of which are sometimes hypothetical. "What will it cost me to do this as compared to doing that?" What will it cost an automobile manufacturer to make his own carburetors as compared to buying them? What will it cost a railroad to make repairs in its own shops as compared to letting outside shops do the work? The answer may hinge on whether the company has equipment which will stand idle if not used for this purpose. The conclusion is that the department dealing with costs should be prepared to furnish not only accounting records but also a variety of statistical and comparative analyses of costs, based not only on the book costs but on other data of a physical rather than of a purely financial kind. Thus what we may call "cost analysis" may supplement or even take the place of "cost acounting" in the traditional sense.

Accounting may, however, furnish very fair approximations without going so far. Direct expense per unit is often very close to the extra cost of added output, under conditions of idle overhead and in the short run. A "standard burden rate" may, within limits, be the means of a very good rough measure of differential cost, if the unit "cost of idleness" is subtracted from the full unit cost of production, to find the minimum below which added business will actually make the concern poorer rather than richer. The unit "cost of idleness," for this purpose, should be reckoned as the unabsorbed burden, divided by the number of units by which output falls short of normal.

Questions of Community Efficiency

Some of the chief discrepancies between private and community accounting arise from the shifting and conversion of overhead costs when they are passed on to the purchaser of the product. They are typically changed from constant to variable, as when a manufacturer pays so much a ton for coal, regardless of the constant costs of mining; and the coal thereafter figures as a variable cost to him and to all subsequent links in the chain of producers that reaches to the ultimate consumer. Thus in these later stages—whose policies largely govern the rate of output for the whole—the extra cost of extra output is exaggerated, and the economies of regularization appear far less than they really are. The dealer stops buying goods and reduces his expenses by the full buying price; but the manufacturer cannot save this much by curtailing production. He in turn reduces his purchases of coal and materials and saves the full price; but the producers of these things cannot save this much by curtailing their production. And so it goes. The producer who curtails output causes wastes of idle

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overhead far greater than those he experiences himself. Integration results in a truer picture of costs; unless neutralized by the separate handling of cost systems in the separate stages of the integrated process, but it cannot go far enough to prevent all distortion. The economic waste of idle time is vastly greater than the accounts show; and added production would often be self-sustaining though it could not pay its costs as the books show them, or as they actually fall on a particular producer or dealer. He might lose money by doing something that would pay the business community as a whole. This is one reason why the cooperation of producers who realize their joint interests can do so much more than the efforts of one alone.

What should be done about it? We should not expect producers to ruin themselves for the good of the community, as they might if they acted prematurely and alone. But we should expect them to recognize the reality of a community accounting which differs from private accounting; and where they have a margin of doubt or discretion, to follow the policy most in accord with community interest, givng it the benefit of all reasonable doubt. We should also expect them to cooperate, to refrain from imposing on each other burdens of unnecessary irregularity, and in so cooperating to develop a clearer realization of the ways in which business-community accounting differs from customary accountancy, and of the very practical stake they all have in developing the unused capacities of the business machine as a whole.

Discussion

Wallace Clark.[3] Mr. Clark's paper is what Mr. Gilbreth used to call "a thought detonator" and there are several things which I would like to discuss, but there is time for only one point and that is the unabsorbed burden or, as I prefer to call it, the cost of idleness.

In my consulting work I find that the facts in regard to this cost of idleness provide the most effective information for the determination of manufacturing and merchandising policies.

Methods of securing these costs are often shrouded in mystery and, as a result, an executive believes that the clerical work necessary to secure such data is so expensive that he may not be able to effect sufficient savings to pay for the work. This is a serious mistake, for the methods of cost recording which will give this information can be made far more simple than the usual methods which do not furnish this data.

I will outline briefly one method of doing this in a manufacturing plant.

Past records of expense and plans for the future are studied and the overhead expense of the plant kept ready for work is pre-determined.

As you know, material which is standing on the floor of a shop is not affected in any way by that shop: it is only when machines are applied to the material that any value is added to it (with machines I would include tools, hand operations, the application of heat, electric current, acids, etc.). Therefore, the plant costs can be applied to the material through the machines, that is, the overhead of the shop is distributed to the machine in the form of a machine hourly expense rate, which we usually refer to as the idle rate, for that is the cost of keeping the machine ready to run. When it does run there is the added cost of power, supplies and other expense due to the actual operation of the machine. This is added to the idle rate and the result is the running rate.

By means of these machine rates the entire overhead of the plant is each day distributed either to production orders by means of running rates, or to certain idleness accounts by means of idle machine rates. These idleness accounts do not merely represent unabsorbed expense, but are built up accurately and are subdivided according to the reasons for the idleness. In a typical machine shop, these accounts are as follows:

Lack of Help
Lack of Material
Lack of Power
Lack of Tools
Repairs
Lack of Orders

These costs of idleness due to repairs, lack of tools, etc., are usually reduced as soon as they come to the attention of the management. Idleness expense due to lack of orders provides a basis for determining sales and pricing policies. For instance, in a plant where the product is made to order, as I pointed out in a paper presented before the Taylor Society in 1921, the raising and lowering of prices should depend on the amount of work ahead of the plant, because that forecasts the probable losses due to idleness of equipment.

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[3] Consulting Management Engineer, New York.

I heartily support Mr. Clark in his efforts to bring about a more intelligent understanding of overhead costs.

Otto F. Taylor.[4] If time permits I should like to mention two things which occur to me in connection with Professor Clark's paper. The first has to do with the problem at what he calls its technical level. Professor Clark has said that differential cost is not an accounting quantity and the books cannot show it. I believe we ought to recognize that there are many things books cannot show, and that a great deal of effort is wasted in trying to construct and operate a mechanism which will produce unit costs continuously. Traditional accounting, as I see it, is a method of recording facts regarding events which have occurred, whereas the cost data which an executive needs as a basis of action are costs under present, prospective, or hypothetical conditions. The discovery of such costs must rely upon the technique of analysis and research rather than of record keeping. The records can and should furnish basic data for analytical study. But if we attempt to make the books of account play a symphony of what may happen and what might have happened, the result is likely to be discord and confusion.

The second point I want to make is that the cost problem often arises at a level intermediate between the company policy and community interest. The customs of a trade as a *whole* frequently present serious cost problems. I have in mind, as a simple example, the flaxseed crushing business, in which the cost elements are four: raw flaxseed cost, crushing expense, market price of oil, and market price of the meal produced concurrently with the oil. It is a tradition in the industry that the cost of the principal product, crude linseed oil, is the sum of the cost of flaxseed, plus cost of crushing, minus the market value of the cake and meal. At ten cents a pound for oil and $45 a ton for meal, the total sales value of the product of a bushel of flaxseed is $2.65, of which eighty-five cents, or about a third, comes from the meal. This would indicate that the meal is as much a principal product as the oil. An additional fact of importance is that the demand for these two products comes from entirely different sources; the oil is sold to manufacturers of paint, ink, and linoleum; the meal to farmers and stockraisers. In other words the demand for them is subject to widely different influences. Under the traditional formula, however, these differences are combined. The result is that, as the trade succeeds in educating the farmer to increased use of linseed meal and the price rises, there is a tendency to reduce the price of oil. From an economic point of view each product should bear its fair share of the costs, for which they are jointly responsible, and the profit obtained from the sale of the two products should be separately computed. The benefits to be derived from such a change of view are considerable, but they cannot be obtained by any one manufacturer. The change, to be effective, must be made by the trade as a whole.

OVERHEAD costs play a fundamental part in the behavior of business at every stage of that many-sided phenomenon, the business cycle. The part they play is most paradoxical. For they make regular operation peculiarly desirable and peculiarly profitable, so that business feels a definite loss whenever output falls below normal capacity, and yet it is largely due to this very fact of large fixed capital that business breeds these calamities for itself, out of the laws of its own being. And the largest businesses, which have the highest percentage of constant costs due to invested capital, are, as we have seen, precisely the ones which fluctuate the most, so far as employment is an index. There is something about the commercial-industrial system which bewitches business so that it does just the thing it is trying to avoid, and is held back from doing just the thing it yearns to do—maintain steady operation and avoid idle overhead. And while the contributing causes of this strange auto-hypnosis are many and of varied character . . . the underlying fact of large capital plays a central part, and the elasticity of costs, sunk costs, and the shifting and conversion of overhead costs are all facts of major importance. (J. Maurice Clark, *The Economics of Overhead Costs*, p. 386.)

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[4] Certified Public Accountant, New York.

Hand to Mouth Buying[1]

An Appraisal of Current Buying Practice

By **WILLIAM O. JELLEME**
Millburn, New Jersey

SO MUCH has been written and said of late concerning hand to mouth or current buying, that there can be no doubt that this habit is the problem having greatest effect upon the policy of distributors today. It has passed through its first or emergency phase, when it was considered something of a fad, soon to be abandoned, and has become the settled policy and habit of hundreds of buyers. As such it necessarily affects the man on the other side of the equation—the seller. His methods of operation, his merchandising policies, must follow altogether new plans, rather than those which have guided him in the past. He is striving to find new sources of information which will give him a better insight into what is going on in his own business and how that business relates itself to general conditions in his industry and in the country.

As in mathematics, the statement of a problem is a great step toward its solution, so this attempt is made to set forth some of the effects of the current buying habit on merchandising practices, that in the setting forth a solution for some of the difficulties may be suggested. This study is offered, not as a remedy, in no sense as a cure-all, but simply as an effort to think the problem through.

The depression of 1920 and 1921[2] came about through a decline in purchasing by retailers who feared a fall in the price level. Retail sales of the country held their volume long after there had been a radical decline in wholesale sales, indicating that the decline of buying by retailers was caused by fear—fear of a decline of prices and a realization that their stocks were too large. The consequent slowing of manufacturing and of industry in general caused a decline in individual incomes and consequently a later decline in retail sales, after which business could be resumed only through an adjustment in the general price level.

The period from 1900 to 1920 had been one of notable development in production, culminating in the great production of 1918, the greatest, when price level is considered, which the country has known. During this period attention was given by managers to methods of production, to improved machinery, to methods of planning and scheduling, and to any means which would produce more goods at lower cost.

At the same time some attention was being given by a few retailers to the application to the business of selling of the same principles which were being successfully applied in the field of production. Probably the earliest application of this sort was Filene's, though a few other department stores ran close second. By 1920 a considerable number of stores had accurate records showing them their merchandise position, and when the change in selling conditions came, with turnover the watchword, they were ready for it, and similar methods were rapidly adopted by many others. Almost over night conditions changed from a seller's market to a buyer's market, and instead of a scale of rising prices in which only the carrying of an inventory was necessary to make money, a downward trend of prices ensued, in which a large inventory meant a large loss.

In order to clarify this discussion a few definitions are offered:

Distributor—the sales function of a manufacturer or producer, distributing goods from primary sources

Jobber—an agency which buys from many distributors and sells to retailers, usually within a restricted area

Retailer—that agency which sells directly to the ultimate consumer

Formerly, when the retailer bought the bulk of his season's goods at one time, the jobber did likewise, depending on his knowledge of the wants of the retailers in his territory. Confident in a stable or rising market, he placed his orders well in advance. The result was that the distributor needed to produce very little for stock, but could manufacture against firm orders. As the retailer has decreased his orders the jobber has done likewise, until the slogan of both has become "Buy small and often."

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[1] Paper presented before a meeting of the Taylor Society, New York, December 10, 1926.

[2] For full explanation see "Money," by Foster and Catchings.

Especially in the textile field, spurred by the intense competition of excessive production facilities, rapidly changing styles have added to the difficulties. New styles brought out to aid sales have frequently upset the entire industry and have made everyone wary of heavy buying.

Small purchases by the jobber have forced on the distributor practically the same operating problem of small unit shipments as he would have if selling direct to the retailer. In many cases he has taken the step and is selling direct to the retailer, getting a higher margin of profit, but having an increased selling cost and an increased operating cost. To meet these conditions he must be able to make quick deliveries of goods from stock, and must therefore make up goods for stock at his own risk, depending upon his knowledge of style and market conditions. If he has a large unsold stock or commitments and the market declines, he again faces a loss.

For these reasons the jobber is losing his old place in the channels of distribution, and the habit of current buying in all fields concentrates its effects on the distributor, both as an operating problem and as a merchandising problem: an operating problem through costs and methods, and a merchandising problem through market and style risk.

In the operating costs, some expenses vary with the unit of quantity but some vary with the package. For example, handling and shipping costs, when reduced to unit quantity, are higher for small package lots than for large ones. This may pay, especially from the standpoint of the retailer, for he will feel he is in the best position when he can replenish his stock, almost day by day, at the same rate at which it is depleted by sales. In the office, operating costs vary to a large degree with the unit shipped. Therefore, a small shipping unit raises the cost per unit of material. In some instances this has been successfully met by combining several operations in one writing, as for instance the fanfold order and billing combinations.

In distributing to trade channels several methods are to be considered. The same method will not be the best to meet all situations that may present themselves.

Central—one shipping point, forwarding to all territories. This is well adapted to large quantity shipments, but if the unit of shipment decreases, its cost increases. When a buyer orders in small quantity, as a rule he wants a quick delivery, and the large central warehouse is not effective in meeting this condition over long shipping hauls. On the other hand, one warehouse means one warehouse and shipping force, which is an economy, as also one rent item and one inventory. The total space used can be kept lower when concentrated than when broken into several units, owing to greater flexibility.

District—a number of warehouses, each serving its adjacent territory and able to deliver quickly. Quantity shipping rates are enjoyed on the long hauls from point of origin, and the high package rates apply only in the final delivery. The chances are, however, that with several warehouses the total inventory will be higher than with one. Other disadvantages are the several warehouse and shipping forces, and the several rents.

Jobbers—If the distributor markets his product through jobbers, he retains the advantages of one concentrated inventory to be had under the central warehouse plan, as far as his own stocks and investment are concerned. He must depend upon the jobber to push his product with the retailer. How well this is done will depend upon how closely in touch he is with the jobber, how much follow-up and how much sales help is given. For the jobber in turn must carry an inventory on which high turnover is expected, and he is likely to favor those goods which to the greatest degree sell themselves. The contacts of the jobber with his customers, especially if he operates principally in contiguous territory, can be very close. Under such conditions the distributor's selling costs depend entirely upon the average size of order placed by the jobber.

Except with very large production, branch warehouses are expensive to maintain. The smaller distributor can get his product into any territory by combining with other products through the agency of the jobber.

The merchandising problem may far exceed in importance the operating problem, or it may be relatively insignificant. In staple commodities it is likely that the operating problem of handling small quantities will be of prime importance. In some staples, especially those having a large possible variation in market price, and in practically all non-standard or fancy goods, the merchandising phase of the problem receives extra weight.

Fortunately, and unfortunately, styles change. Sometimes these changes can be predicted with certainty, but again there is a complete reversal almost over night. There appears to be no way of combating the risk due to changing styles except by keeping inventories of finished goods at a minimum. This requires accurate knowledge of the stock and movement of every commodity.

Again resorting to definition for a clearer understanding:

> Stock—merchandise the title of which has passed to the dealer, so that he has either paid or assumed the liability for it. It may or may not be in his physical possession.
>
> Orders—the new orders booked, whether for immediate or for future delivery.
>
> Unsold stock—that amount of stock which cannot be applied against any orders on hand.
>
> Commitments—materials for the acceptance of which the dealer has obligated himself—purchases for delivery at a future date.
>
> Total unsold—the balance left after applying the orders to both stock and commitments

If the actual stock, the unsold stock, the total unsold, and the orders are known at very frequent intervals, it is possible, by manufacturing only according to sales developments to keep turnover active and the stock low. To obtain such a result means not alone having records, but using them constantly; making the information which they contain a part of the basis of every decision. In starting any new material a market test can be made to determine its sales possibilities, and only after such a test should quantity production be started. This may mean a slight delay in getting the article on the market, but at any rate stocks which will be difficult to move have not been piled up. In order to obtain such knowledge as that mentioned—orders, unsold stock and total unsold—very carefully planned and run stock and sales records are necessary. This may seem to involve an additional burden of clerical expense, but without it merchandising control is a matter of mere guesswork and hunch.

The risk due to fluctuating market conditions has its effect through, and may be controlled by, the same means as are used to reduce the style risk. In order to know the total market risk, however, it is necessary to know not alone the unsold surplus of each commodity, but also the total unsold of the entire business, for it is this figure which truly represents the speculative risk; that is, the amount which we are long of the market. Again, the effect is not nearly so great if the unsold is stated in yards, pounds, or any other unit of quantity, as it is if stated as value in dollars. If stated in dollars, it is very easy for the executive to see what his loss will be should the market decline ten percent, whereas a statement in quantity does not bring out this phase so vividly.

For some commodities, protection of the unsold surplus may be secured by hedging sales in the future contract markets; that is, sales of future contracts in the same amount as the total unsold. Certainly full protection of the market risk cannot be obtained without a study of market conditions—not alone those of the immediate industry, for that is absolutely essential, but those of other industries, and the general economic condition of the country. This is doubly necessary if hedge sales are to be used at all. Again in these instances information which is a matter of record is of more value than is information gleaned from a variety of irregular sources, which simply leaves a more or less unreliable "impression."

Since hand to mouth buying manifests itself in a large proportion of immediate delivery or spot sales, it is of value to know at all times what the relation is between the spot and future delivery business and the total new business booked.

Knowledge of unsold surplus, of sales, and of stocks can best be made use of in directing buying policy. With such knowledge available it is possible for the executive to make his inventories practically anything he wants, buying only enough to bring the inventory back to standard. If the actual sales do not come up to expectation, then of course the inventory will be higher than expected and a revision of plan must be made immediately if the inventory is to be kept within bounds.

Such a plan of merchandise control, whereas often known as a budget, is in reality very flexible, and the entire buying schedule is automatically revised every time a statement of position is made. In each statement the correction for actual sales performance is used instead of the estimated sales for the latest period.

By such a plan everything depends upon the accuracy of the sales budgets or estimates, and the same is true in practically all fields of merchandising. If that is so, does not a part of our solution lie in bringing closer some of the links in the chain of distribution, developing working agreements among those who ordinarily trade, so that the estimates of consumption may be passed along the line. This is done to some extent in certain fields today, where, commodities having been agreed upon, estimates of consumption are given, the actual orders to come later. In this case no sale is actually made until the orders are placed, but the producer and distributor are not left entirely on their own judgment, but are given an estimate on which to work.

If such estimates are possible in some fields, are they not capable of further extension? Perhaps the eventual step lies in an integration of production and sales schedules, all the way from producer to retailer. An integrating plan might take any one of several forms, for example—

1. In specialized fields of manufacture with little or no competition it will first take the form of definite orders for each style or number traded in. Such a condition of absence of competition may appear to be ideal from the standpoint of the producer, but by its own nature cannot last long. The regular flow to the consumer of the special articles produced soon attracts other producers who will make the same or at least similar ones.

2. In fields in which competition enters, but in which the articles manufactured retain to some extent an individuality, even though closely paralleled by other products, it might take the form of estimates of consumption of each group of similar articles. It is then necessary for each producer to decide to what extent he will take the risk of preparing stocks against expected orders. This phase is common in the textile field; as, for example, several companies may offer printed cretonnes of about the same type of printing on identical grey cloths. The retailer, having selected a group of patterns from several distributors, can probably make a fair estimate of the volume he can sell of all the patterns together but the task of making an estimate of the sales potentiality of each pattern individually would be a much more hazardous undertaking, and the estimates much less likely to work out in practice. The only safe plan is therefore to replenish stocks of individual patterns of finished merchandise as sales developments warrant. The estimate given of consumption of the group would, however, serve as a guide to the manufacturers in purchases of raw materials.

3. A third phase of the problem appears in staple or near staple articles in which there is general competition. Some individualizing of product has recently been obtained in this field by carefully prepared marking and advertising, but there will remain a vast quantity of production in the staple or near-staple field. These articles are fully competitive, capable of easy substitution one for another. In this field would it not be of great assistance to know at all times what the national production and consumption are for the class of merchandise? To do this would, perhaps, require some super-agency through which producers and distributors could report; but when the reports had been accumulated each producer could know what proportion his capacity was to the total.

4. Still another group may be cited of goods which have only a temporary appeal, or highly styled goods, as they are sometimes called. Here again because the appeal of the product is solely one of passing style it would be hopeless to attempt to estimate the consumption of any one such article.

These are but a few examples of the possibilities. They can be brought about only by better understanding and closer cooperation in the field of distribution. An actual combination of organizations or companies is not necessary; in fact, the greater latitude inherent in separate companies with differing interests will retain greater freedom of distribution and wider market contacts. A very close understanding of one another's problems would be necessary, a close working together in a cooperating competition such as we have not yet attained.

The results, when combined with those obtained from close control of inventories, and from careful study of markets, would be enormous savings in capital employed, in markdown losses not suffered, in freedom in the use of capital where most profitable, in faster movement of goods through the entire cycle of distribution, with both capital and workers released for new enterprise.

Discussion

Paul T. Cherington.[3] After each period of serious commercial disturbance or financial depression some rearrangement of merchandise distributing methods is likely to occur. After the Boston fire of 1872 had destroyed the fall supply of shoe samples, shoe selling never again resumed its old concentrated market form. After the panic of 1873, dry goods jobbers in western railway centers were able to give retailers quicker service and therefore to set in process the final dissolution of the great general dry goods jobbing houses of the eastern seaboard.

To be sure other factors entered. The growth of ready-to-wear clothing, the development of larger store units, the migration of industries, and changes in transportation facilities or freight rate structures all have been a factor, but in case after case some definite financial or commercial shock of this sort has caused a new alignment of business.

This hand to mouth buying movement of the past three years seems to me to be quite manifestly a development of this sort, following the shock of general shrinkage in inventory values during our recent so-called "period of deflation." To be sure, the recovery of the railroads from the ministrations of public operators, the betterment of freight movements and of freight train performance, the construction of new and better warehouse facilities, the better facilities for financing bulk transit movements—all these, and perhaps other changes, have helped the movement along; but the fact remains that this change in business methods first developed in about 1920-21 and has since given evidence of being here to stay. The wise manufacturer will adjust to this apparently permanent change.

Perhaps a nucleus of advance orders can be got to serve as a basis for manufacturing operations, but as a rule these must be paid for at about whatever terms the buyer chooses to impose. Perhaps the line may be one which will lend itself to stock production so that staple items may be made on speculation and stored at convenient points to meet demand when it develops. This means added risk, and when it cannot be hedged, must, in the long run, be allowed for in the price. Perhaps it may be possible to curb in some measure the wildest vagaries of the consumer's will so that staple items may play an increasing part in the business. Perhaps other forms of minimizing the worst features of the new situation will be found. But the fundamental thing is to recognize the presence of this change in business methods, and to attack it, not as an evil to be eradicated but as a new condition to be met.

Mr. Paul H. Nystrom.[4] Mr. Jelleme has stated the facts about "Hand to Mouth Buying" very well, indeed. There can be little or no disagreement with all of his conclusions. I must, however, take exception to his statement on how "Hand to Mouth Buying" originated.

You will recall that Mr. Jelleme said that "The depression of 1920 and 1921 came about through a decline in purchasing by retailers who feared a fall in the price level. Retail sales of the country held their volume long after there had been a radical decline in wholesale sales, indicating that the decline of buying by retailers was caused by fear."

This statement places heavy responsibility on the retailers, but can hardly be justified by the facts regarding that period, now available to everyone.

Retailers began to cut down their purchasing about the middle of 1920, as evidenced by the fact that wholesale trade began to decline in July of that year. It is true that wholesale prices had begun to fall sharply as early as March, but the volume of sales continued for at least three months longer.

In the meantime manufacturing had begun to decline as early as February or March and with it unemployment gradually began to assert itself.

Prices of farm products showed declines beginning in March and prices of live stock had started downwards as early as the middle of 1919.

The indexes of retail trade do not tell an accurate story for the reason that they are not sufficiently comprehensive. Chain stores sales for the most part showed increased volumes throughout the year, but chain stores were almost alone in this tendency. Department store volume continued to hold its own throughout the year, but the available indexes for department store trade do not show how this volume was maintained. Mail order sales had begun to fall off sharply as early as February, 1920, and the failure rates of retailers generally began to rise in March. Department store volume was maintained at the expense of profit and by artificial stimulation of special sales. The so-called "consumer" strikes and "over-all parades" began early in the Spring of 1920. Taking all these facts into consideration, it seems too much to assume that the decline in business and buying began with retailers. As a matter of fact, retailers stopped buying when they could no longer sell and a very large proportion of them, to their sorrow, did not stop buying soon enough with the result that they, in common with most industries, lost a great deal of money during 1920.

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[3] J. Walter Thompson Company, New York.

[4] Professor of Marketing, Columbia University.

The origin of "hand to mouth buying" goes back much farther than 1920. It can probably be said to have started in the period back in the 90's when nationally advertised branded goods first began to be important. Some of these advertisers became dissatisfied with their distribution through wholesalers and established means of selling direct to the retail trade. Wholesalers naturally resented this and used such methods as were at their command to check this development. One of the methods used was to show the retailer the advantage of dealing with wholesalers rather than manufacturers direct and the main advantage offered was the opportunity for more frequent buying and in small quantities. "Buy little and buy often" was preached by the wholesalers to the retail trade for years.

In 1911 there occurred three events which helped to emphasize the education of the retail dealer in buying little and buying often.

First of all, scientific management was popularized and advertised to the business world by the Hearings before the Inter-State Commerce Commission, conducted by Justice Brandeis, with the help of the leaders of this movement. Scientific management did not, of course, start with these Hearings but the news about them brought this subject to the attention of great numbers of people who had never heard of it before. Retailers, among others, began to consider whether they might not also profit from such practices as time and motion studies, standardized operations, perpetual inventories, etc., and it is a very short step from the establishment of a thorough working perpetual inventory to hand to mouth buying.

Later, in 1911, the Supreme Court handed down the Dr. Miles Medical Co.'s Price Maintenance Decision, which made price maintenance by contract illegal. Manufacturers of branded goods, in their efforts to reduce price cutting, had observed that a large part of price cutting on the part of retail dealers was due to ignorance of the costs of selling; hence, when direct methods of controlling resale prices were declared illegal, both manufacturers and trade associations of manufacturers began campaigns to educate retail dealers on accounting and particularly on keeping a proper account of expenses.

There had also been beginnings before 1911 in certain educational institutions towards promoting the study of retailing and of retail accounting, but during that summer the Harvard Bureau of Business Research undertook its first investigation on the costs of selling among retailers. This study has been followed by many others. Harvard University has earned a very creditable place for itself in the history of business by this work. While the number of accounts collected from retailers was actually not very large, the influence created by the effort spread very widely. A closer attention to accounting and the costs of selling led directly to a comparison of buying by various methods and frequently to the conclusion that it was more profitable to buy little and buy often.

Following 1911, there was scarcely a retail dealer's meeting of any magnitude in which the subjects of scientific management and costs of selling in their relation to retailing were not discussed in one way or another, and in connection with these discussions the subject of better buying, often with the emphasis on buying less and more frequently, was brought out.

These educational movements among retailers continued in a flourishing way down to the time of the war. During 1917 and 1918 all principles of business were more or less upset and during 1919 and the early part of 1920 the insatiable demands for goods from consumers were such that retailers had apparently forgotten all they had learned before the war about scientific management, turnover, buying, etc.

When the consumers' strikes began in 1920 retailers received sharp reminders of the sound principles of buying they had been taught before the war and which they now sought rather abruptly to reestablish.

Retailers are now practicing the good lessons that they had been learning gradually for at least twenty-five years from wholesalers and for at least fifteen years from manufacturers and from the teachers of scientific management. Hand to mouth buying is one of the outgrowths of the retailers' understanding of the principles of scientific management. If the war had not occurred I feel sure that we should have had all of the present effects of hand to mouth buying that we now have except that they would have come about by gradual processes instead of in the abrupt way in which they sprang into attention in 1921.

Hand to mouth buying, in my opinion, for most retailers is sound and economic. It has undoubtedly been over done in many cases. Interesting and profitable modifications are possible but it is a movement which is undoubtedly here to stay.

Richard A. Feiss.[5] As Mr. Jelleme has pointed out, it would be useless to argue much about hand to mouth buying. Whether we like it or not, it is here, and it seems to be here to stay, at least so far as the final user or distributor is concerned.

The discussion this evening centers about the relationship of retailer and manufacturer in the normal instances where the retailer purchases directly from the manufacturer. The picture is very clear as to the effect on the retailer, but we do not seem to take into consideration the effect of hand to mouth buying on the problems of the manufacturer who is supplying the retailer.

What really has occurred is a shifting of the burden. The retailer has materially reduced the stocks that he formerly carried, and has to a great extent eliminated the risk in style purchases, but the conditions so far as the manufacturer is concerned are the reverse. In a large percentage of cases, the minimum time required to manufacture an order from raw materials and get it to the retailer is not a period of hours or days, but of weeks and months. In order to supply the retailer under conditions of hand to mouth buying, it has become necessary for the manufacturer to develop a large "stock on hand" department. It is in this way that the burden has been shifted.

There should be an advantage in this for the buying public in that the sum total of the value of stocks carried by the manufacturer under these conditions is considerably less than it was when the retailer anticipated the season's wants.

On the other hand, the problems of the manufacturer have been distinctly increased. The fact that maintenance of continued production is essential, not only to low costs but to the maintenance of any production service, has not been altered. Manufacturers' costs have been substantially increased by the building up of "stock on hand" departments, and the element of risk has been considerably increased. To the fundamental requirements of cost and quality has been added that of service. As a compensation for this service the manufacturer is undoubtedly entitled to part of the savings made by the retailer under these conditions, but he is not likely to get it, at least not while the present buyers' market continues; and I believe it is likely to continue for an indefinite period of time.

There has never been a time when the necessity for applying the fundamentals of scientific management to all phases of the manufacturers' problems has been so apparent. I also feel that these same fundamentals of scientific management are essential to the solution of the problem involved in the relationship between manufacturing and retailing.

In this connection, I must remark that I have been surprised at the failure of anyone to mention direct selling in connection with hand to mouth buying. The growth of this method of distribution since the war has been very great. Where it has been applied to a particular type of merchandise, direct selling has been generally successful. In such instances it has made possible continuous production together with a reduced total inventory and a resultant lower cost to the consumer. There is no question in my mind that the success of direct selling has occasioned the large retailer a great deal of thought. I believe that syndicate buying and a constantly improved relationship between retailer and manufacturer are a direct result of this thinking.

While I believe that direct selling has come to stay, I do not believe it applicable to all classes of commodities. It has the limitation of being unable to give that kind of retail service which a greater part of the shopping public unquestionably demands.

When I hear Mr. Nystrom tell of the developments in syndicate buying, even to the point of building a large number of warehouses, I feel bold enough to predict the direction towards which such developments are tending. I believe that sound economic theory sees the production process as a whole, from the original obtaining of raw materials in commodities or services to delivery to the ultimate consumer. The solution, therefore, seems to me to be along lines of so-called vertical integration. As I see it, this does not necessarily mean a common ownership of the elements of production in the vertical line, but it does mean a much more intimate tie-up of all the steps, including retail distribution. The developments involve going further than syndicate buying has yet gone. The syndicate corporation should not only include retailers, but manufacturers. This would put the manufacturer into the retail business and the retailer into the manufacturing business. Their interests would be identical, and the common objective of service to the consumer at the lowest cost would be possible of accomplishment.

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[5] Consulting Management Engineer, Boston, Mass.

Sanford E. Thompson.[6] Current buying, a term logically replacing that of "hand to mouth" buying, appears to be a natural sequence of the more thoughtful and systematic business policies that have been developed of recent years to avoid the cyclical extremes so prevalent heretofore. Naturally, as was indicated by Mr. Jelleme, the depression of 1920-21 coupled as it was with the studies of the business cycle instigated by Mr. Hoover[7] was the primary cause of this present change in buying trend.

Because of its historical importance in business progress, a further word in regard to this depression may be of interest. The cause of this depression can be stated even more specifically than has been done by the author of the paper. It was due, unquestionably, to over-accumulation of stock, an accumulation, however, not simply on the retailers' shelves, but particularly in the process of shipment on the railroads, which had not then recovered from the meagre replacement of equipment under Government ownership, and in the process of manufacture at the plant. The distinction between this point of view and that expressed by Mr. Jelleme is important because, if simply excessive inventories of the retailer were to blame, we might expect a frequent recurrence of the difficulties, whereas the combination of causes is less apt to occur, especially with the wonderful improvement that is taking place in railroad management throughout the country.

Returning to the subject of current buying, it is evident that this should create no problem for either the retailer or manufacturer of *staple* merchandise because demand can be measured and production planned accordingly regardless of whether a few large orders are placed or a multitude of small orders.

In style merchandise, however, many manufacturers, in times past, have depended on advance orders from wholesalers or retailers to gauge the demand for the various styles; and, in fact, have gone to the extreme of manufacturing only those goods for which they have actual orders. "Hand to mouth" or current buying is particularly prevalent, naturally, in merchandise which is affected by the style factor.

With the development of current buying, the manufacturer of style merchandise has been confronted with the problem of anticipating the demand for the various styles which he produces and, in fact, for his entire line. If he guesses wrong, he is confronted with the disagreeable situation of a large stock which must be disposed of at a loss.

Notwithstanding this situation, however, we find, contrary to general belief, the rather astounding conclusion that the progressive manufacturer, even of style goods, is overcoming this handicap and accepting current buying as a benefit to his business.

This has been brought to our attention directly in three industrial surveys covering the boot and shoe, the knitted underwear and hosiery, and the cotton dress goods industries in New England just completed by the Thompson and Lichtner Company, for the New England Council. A number of manufacturers testify to the steadying influence in their production and planning departments of current buying if assisted by in-stock departments. Almost one-half of the shoe manufacturers, whose operations were studied — and these were among the most progressive concerns —were found to have minimized the effect of seasonal fluctuations by in-stock departments which coordinated current buying with production. The most successful underwear and hosiery manufacturers have established these in-stock departments and report a steadying influence on their production, these departments acting as reservoirs into which flow the goods from their production departments and from which are drawn the numerous small lots to fill current buying orders.

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[6] President of the Thompson & Lichtner Co., Inc., Boston, Mass.

[7] "Business Cycles and Unemployment," McGraw-Hill Book Company, New York, 1923. cf. Chapter X "Methods of Stabilizing Production and Distribution," by Sanford E. Thompson.

The fundamental principle which explains this situation—although not recognized as such even by many of the manufacturers who are accepting it in practice—is the fact, contrary to general impression, that changes in demand even in style merchandise do not often occur suddenly. There is a gradual increase or decrease, ordinarily—the time required for the completion of the cycle varying with different industries and different marketing methods. It has been proven that if carefully watched, through adequate records, trends can be established from the outward flow which will give advance warning of any increase or diminution of demand, thus enabling a production department to plan accordingly.

The Creange Three Phase System,[8] which is based on this principle of comparatively slow changes in style, has been worked out from the practical standpoint to reduce the hazards of style merchandising to a minimum. It was devised by Mr. Henry Creange who has made such a conspicuous success in styling silk for Cheney Brothers. The system was based on the principle that no successful style is conceived, lives, or dies in a single season. On the contrary, the novelties *which find acceptance* in one season become the staples for the following season. The Three Phase System consists of dividing production into three parts. The first part or Phase, which should not include more than thirty per cent of the entire production, covers the introduction of new ideas and new styles. It is in reality the testing ground for the mass production which is covered by the second Phase. The second Phase, which should include about forty per cent of the total production, consists of putting into mass production those styles which were found to be successful in Phase One of the preceding season, together with other styles of still earlier seasons which have been so uniformly successful as to become staples. Phase Three, which should include the remaining thirty per cent of production, in common with Phase Two, entails very little style hazard; it consists of the transformation and adoption of the preceding seasons' outstanding successes in kindred lines or industries, including competitive lines.

By the application of these principles, production planning may be coordinated with current buying in such a way as to minimize style hazards for the manufacturer, and at the same time establish a certain prestige based on the production of styles which meet with a ready sale.

Current buying has made it necessary for the manufacturer to assume the lead in the creation of styles, and the technique of production must adapt itself to this situation. There is, however, to be derived from this condition a far greater stability from a production standpoint than formerly existed when the manufacturer depended upon the distributor for the selection of his styles with the resulting lack of control.

In connection with the somewhat drastic recent criticisms of New England industry, that have been so fashionable lately, it is of interest to note that this extension of scientific methods into styling has originated and been carried through to its most practical conclusion in New England. It is along such lines as these, originating with the type of research that this Society stands for, that the New England Council, which is made up of twelve leading men from each New England state, is getting at the fundamental principles of industry and business and, by means of its progressive studies, is becoming a leading factor in maintaining New England precedence.

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[8] "Three Phase System for the Mass Production of Style Goods," the New England Council, Statler Building, Boston, Mass. Copies may be secured from the Council.

THE "business cycle" stands in a class by itself, distinct from all other kinds of industrial periodicity, partly because the lean years must furnish their own dividends, partly because the time and extent of recovery can never be anticipated with sufficient certainty to make it practicable as a general policy to "work to stock" and to store up goods in advance, and partly because the cycle lasts so long that styles will change and specifications alter, so that few goods are durable in the sense of holding their economic value through the changing phases of boom and depression. Thus the business cycle is one which is, in its very nature, almost impossible to treat as a cycle at all.

(J. Maurice Clark, *The Economics of Overhead Costs,* pp. 164-165.)

Henri Fayol

A Great Engineer, a Great Scientist and a Great Management Leader

By CHARLES de FREMINVILLE
Consulting Engineer, Schneider et Cie, Paris

Foreword

We desire to express to M. de Freminville, on behalf of the readers of the Bulletin, their appreciation of his kindness in preparing, by request, this interesting statement concerning Henri Fayol and his doctrine. The Fayol doctrine is in many respects identical with and in many more respects complementary to the Taylor doctrine. Fayol focused his attention on organization and control of general administration; Taylor focused his attention on organization and control of shop operations. But although they started from opposite points of the compass, they so set their courses that it was inevitable their doctrines should come together. The life and docrine of Fayol should be inspiring and helpful to the American executive as the life and doctrine of Taylor have been to the French executive. (EDITOR).

A YEAR AGO the management world lost one of its eminent leaders in the sudden death of Henri Fayol, who had remained full of life and energy despite his great age. His life, turned from the beginning toward the highest ideals, was of such magnificent simplicity that its history can be given in a few words, though the task accomplished is of immense value.

After graduating from the Ecole des Mines de St. Ettienne in 1860, he was engaged by the Mining and Metallurgical Sté de Commentry Fourchambault, in which he was to spend his whole engineering life. He was general superintendent from 1888 to 1918, when he retired from his executive position to become Director of the Board of the same company.

In public life he was a member of the most important committees in Mining and Metallurgy and a member of the Conseil de Perfectionnement du Conservatoire des Arts et Métiers, as well as an officer of la Légion d'Honneur.

His research on the technical problems involved in coal mining as well as his scientific contribution to the study of the formation of coal fields have become classics. In these studies some of the greatest geologists cooperated with him. Some of his papers were published in the Bulletin de l' Académie des Sciences.

He gave a great impetus to research in special steels at the laboratory of the Imphy works of his company, where such men as Chevenard and Ch. Ed. Guillaume completed their studies. The latter was the recipient of the Nobel prize for 1921.

The full story of his own executive work is included in the following short statement: In 1888 he assumed the responsibility of the management of the Société de Commentry Fourchambault et Decazeville, that company being then in the most critical position, and in 1918 he was able to hand it over to his successor in a splendid financial situation and, still more important, with a staff of exceptional ability.

His remarkable attitude toward the work he had accomplished is shown by his statement that this astounding success ought to be attributed solely to the method he had followed: "With the same mines, the same plants, the same amount of capital, the same market, the same board of directors and the same staff, simply because of the new system of management, the company experienced an ascending prosperity to be compared only with its previous downfall." And he was anxious to make evident that by simply planning and acting with a little method and order anyone could have done what he had done.

His friends in the scientific field were struck with the unflinching faith in "method" which was apparent in all his works, and the great professor, Termier, the savant, the poet and highly religious man, speaking of the discoveries of Fayol, said: "I wonder whether one of the discoveries or the method which led to the discoveries must be most admired," and Fayol goes on; "It is not the theory of 'coal mine fires' which led to the 'theory of deltas'; neither 'geology' which led me to 'administration'; it is not the 'problem of administration' which led me to the 'problem of life.' The whole thing sprang up before me as the result of 'Method,' the one 'Method,' the universal 'Method' of which we must make use in all things and in everything, everywhere."

In the year 1900 he began to disclose his thoughts on management at the International Congress of Mining and Metallurgy and still more forcibly in 1908 and 1916, when he presented his great paper "Administration Industrielle et Génerale,"[1] which has been termed a catechism for the chief executive's education.

"It is evident," said Sainte Claire-Deville, an eminent mining and metallurgical engineer, "that 'administration' and 'organization' have existed for a long time, but the great merit of Fayol is carefully to have observed during his long career a number of experimental facts in relation to organization, to have deducted from them a very few simple principles that he put into a very clear form. These are so simple and so clear that one is inclined to say: All that is old, is known, is evident! To be sure it is. But if any one of us is sincere he will confess that while he had known, or thought he had known, Fayol's principles, he had disregarded them, willingly or not."

Fayol came that we might understand better what a leader in state or private business management, an administrator, ought to be. He made us realize what were the essential qualities of the great Roman colonial administrators, of the great managers of state affairs, of which France has had several; one of the greatest, if not the greatest, being Colbert, who, like Fayol, began with the management of private affairs before assuming charge of those of the country.

The Administrative Doctrine of Fayolism

"The Administrative Doctrine," says Fayol himself (Second Congress of Administrative Sciences, Brussels, 1923) "is a body of principles, rules and processes aiming at helping the management of any undertaking, be it big or small, in industry, commerce, politics, or even an undertaking with a religious or other aim."

1. Essential Functions.

All the functions in any undertaking are contained in the six following groups:

a. *Technical* (producing, manufacturing, transforming)
b. *Commercial* (buying, selling, exchanging)
c. *Financial* (finding and managing capital)
d. *Safety* (protecting property and persons against casualties)
e. *Accounting* (inventory, cost accounting, balance, statistics, etc.)
f. *Administrative* (planning, organizing, commanding, coordinating and controlling)

The administrative doctrine deals only with this last group, therefore it does not include the whole government of the undertaking. *Governing* is conducting the undertaking towards a certain goal, trying to make the most of the resources at its disposal. It is looking towards the accomplishment of the six essential functions. *Administration* is one of the six functions trusted to the care of the government, but it takes such a great place in what the highest executive has to do that people may sometimes think that his task is purely administrative.

The administrative function consists essentially of foreseeing, organizing, commanding, coordinating and controlling.

Foreseeing is forecasting the future and planning action.

Organizing is building the material and social frame of the undertaking.

Commanding is bringing the staff and force into action.

Coordinating is linking, uniting and harmonizing every act and effort.

Controlling is seeing that everything goes on according to the established rule and issued orders.

Therefore, administration is not the exclusive privilege of the chief executive or directors of the undertaking; it is a function which is distributed, like any other of the essential functions, between the head and limbs of the social body.

The technical function is not limited to the workman or the engineer; it extends upward to the chief executive. Conversely the administrative function is not an exclusive attribute of the chief; it extends downward to the lowest executive. But the share of each class of executive in discharging any of these functions is largely different from any other class, to such an extent that there is no comparison between the capacity—technical, administrative, or of any kind—in a man on the first step of the ladder and the capacity of the same denomination of the chief executive.

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[1] Dunod, 92 Rue Bonaparte (VI) Paris, publishers.

The essential capacity of the lowest executive is that professional capacity which is most important for the undertaking considered, and the essential capacity of the chief executive is the administrative capacity.

Through foreseeing, organizing, commanding, coordinating and controlling, the administrative function has a part to play in the accomplishment of every other function. Therefore, when the administrative function is well discharged it is very likely that the other will be equally well discharged.

To be a good administrator the chief executive must be able: first, to foresee, organize, command, coordinate and control; and second, to have a sufficient competency in that special function which is characteristic of the undertaking.

The other qualities and knowledges that should be found in every highest executive are: health and physical vigor; intelligence and intellectual vigor; moral qualities; will; energy and, if needed, audacity; courage in assuming responsibilities; a high sense of duty and due regard for general welfare; strong general culture; general knowledge of all essential functions.

2. Administrative General Principles.

The administrative capacity has its foundation to a certain extent in natural gifts; but it has a foundation also in a thorough understanding, acquired from actual experience, of the principles and rules of the Administrative Doctrine, which can be summarized as follows:

Division of work; authority coupled with responsibility; discipline; unity in command; unity in management; general interest first; equitable remuneration of work; centralization (more or less according to circumstances); equity; stability of staff (small turnover); initiative; cooperation (l'union fait la force," better than "diviser pour régner").

Such are the fundamental principles put in practice under the "Administrative Doctrine." To carry out these principles, it is necessary to set on foot a *planning or budgeting provision* for the future based on a thorough understanding of the past and present life of the undertaking; an *acting program* or schedule safeguarding unity and continuity in acting; an *organization chart; annual, monthly and weekly reports;* and *proceedings of the committee of executives,* of the greatest importance for cooperation.

When Fayol published his book "Administration Industrielle et Générale" in 1916, he said: "I have been busy at it for half a century. Should some of the ideas it contains come to be of current use in conducting business, after another half century, my time would not have been lost." Today 15,000 copies of the book have been printed and the demand is very great.

His Missionary Work

But, in his own mind, Fayol had merely given a start to an important movement. To keep his friends in contact he founded a "Center for the Study of Administrative Science" freely opened to all interested. Courses in the Science of Administration were created at the Ecole des Hautes Etudes Commerciales, Ecole de l'Intendance de l'Armée, Ecole du Commissariat de la Marine, Ecole de Guerre, Conservatoire des Artes et Métiers, etc.

Above all he wished to bring about a change in the methods in use in state administration and to show that what is absolutely necessary in conducting industrial businesses is still more necessary in conducting state business, where it seems to be absolutely ignored. To that end he made a thorough study of the working of the Post Office Department and other industrial state departments, and even of the working methods of the Board of State Ministers, where he wished to establish more responsibility and continuity in work concerned with national policy rather than with departmental administration. He succeeded in attracting attention in such quarters, and he saw the dawn of the practical application of his principles in state administration. The greatest accomplishment of that kind has been in Belgium and Holland. His books have been translated into many languages and his doctrine is known the world over as *Fayolism.*

Fayolism and Taylorism

Some people think of Fayol as opposed to Taylor; of the French spirit contrasting with the American spirit. This view does not lead to a fair appreciation of these great men.

Both had an absolute faith in scientific method, but circumstances were such that they made different use of it. They started as if from opposite quarters of the horizon to join in the conclusion of their work. Both were pioneers and reformers in quest of the good of all concerned in industry, of the welfare of their country and of the world at large.

The chief difference is found in the place where the first studies of the one or the other were made; Taylor started with the man at the bench or the lathe and built upward; Fayol, more concerned with the task of the chief executive and even of the board of directors, followed the consequences of their conduct all the way down to the working man.

Both of them were men of intellectual culture and high ideals, and they were fighters to the same extent, never satisfied with a more or less benevolent approval. Nothing but the actual practice of the principles they had brought forward could please them. Both encountered more opposition than praise.

While Taylor was misrepresented as trying to drive the workmen, to which practice he was absolutely opposed, Fayol was accused of leading industry towards the obsolete and unpopular methods of the great public administrations of his country, which he was really fighting with the greatest energy. It may be said that Fayol was evoking the work of the great French pioneers in management of public affairs, whose spirit had been corrupted by their successors, and that Taylor was striving to bring the industrial world to a better understanding of and more effective and humane use of the equipment which had been developed to such an extent in the United States. Both were acting as reformers of the evils they were accused of fostering.

Again, both of them had to hear people saying that there was nothing new in the work they had done, that their so-called principles were known to everybody. What everybody knows is simply wonderful, but it is no less wonderful that everybody makes such little use of what he knows; that it requires a great leader and a lifetime work to bring him to do it.

Taylor had departed when Fayol began his missionary work. But at that time Fayol made a thorough study of Taylor's work, to check up, as it were, his own ideas and principles. Like Taylor, he was far more concerned with finding what was true than what could be termed new. At first he was startled with the idea that he did not agree with Taylor. Being anxious to find out how this could be, he came to me in 1916 to discuss the matter, and from that year we were friends.

The confusion came from Taylor's opposition to the omniscient and omnipotent foreman of old. This at first appeared to Fayol as a disregard of the principle of "Unity of Command," which he considered essential in good management. He was not immediately convinced by my argument that Taylor was calling on the management to fulfill completely its own duty—it may have been because I did not put the thing clearly enough before him at that time. This misunderstanding came to an end at the opening of the International Scientific Management Congress in Brussels in October, 1925, when, after arguing once more on the point, I told him that it could be said without the smallest hesitation, that Taylor was absolutely the man who made efficient, even to the smallest operation in the workshop, the "Unity of Command," the method in use being closely controlled by the management. This was a state of affairs which had not existed at all before him; through the functional foreman, functional unity was secured in the whole system.

Then Fayol saw clearly that it could be said that, actuated by the same spirit and guided by the same method, Taylor and himself, starting from opposite directions, had met halfway to reinforce their actions.

No general planning can give its best without a thorough analysis and complete preparation of the smallest operations, whereas, to proceed securely with the organization of the work in the shop it is necessary to forecast the future according to Fayol principles. This pleased Fayol immensely and he told me that, when I should precede him in speaking at the opening meeting of the Congress, I must make such a statement, and that he would enlarge upon it and declare that men like Taylor and himself, moved by the love of truth, could not be in opposition as formerly he had feared. That he did in a splendid manner, and before he died very suddenly, a few days later, he declared repeatedly to his friends that this had been the greatest joy he had experienced for a long time.

L'ADMINISTRATION n'est ni un privilège exclusif, ni une charge personnelle du chef ou des dirigeants de l'enterprise; c'est une fonction qui se répartit, comme les autres fonctions essentielles, entre la tête et les membres du corps social. (Henri Fayol, *"L'Administration Industrielle et Générale,"* p. 13.)

American Management Methods Applied to Foreign Government Industries[1]

A Management Engineer's Informal Description of His Work for the American Finance Commission to Poland

By **WALLACE CLARK**
Consulting Management Engineer, New York

LAST spring the Polish Government asked Professor Kemmerer to go to Poland to advise them in regard to their finances and the stabilization of their money, and to bring with him experts on taxation, banking, government accounting and customs, and a management engineer. This is one of the rare instances where a foreign government has retained an American management engineer in a consulting capacity and your Program Committee has asked me to tell you something about this work.

The greatest need of Poland was the stabilization of its currency and obviously one of the most important steps in that direction was the balancing of the budget. The governmental expenditures of a new country, such as Poland, are very heavy, and it is necessary to secure as much income as possible. A large part of the income of the Government is secured from the industries which it owns and operates, and it was my task, as the engineer member of the Commission, to advise as to how this income could be increased. The Polish Government owns a great many industrial enterprises of various kinds, most of which were taken over from the three powers which occupied Poland before the war. This field was so extensive that it was impossible to cover it with any degree of thoroughness within the eleven weeks of my stay in Poland. I therefore looked over the sources of income from these industries and found that the largest part came from the three monopolies—salt, tobacco and alcohol. The alcohol monopoly was not studied, since its plants were shut down during the summer and would not reopen until the potato crop had been harvested in the autumn.

The salt and tobacco monopolies employ thousands of workers and have many millions of dollars invested in plants, equipment and stocks of materials. In the case of tobacco, for instance, the Government not only purchases raw material and manufactures it into tobacco products, but controls every step of its distribution.

In the study of these two monopolies my first step was to get a bird's eye view of the situation by studying the history of the industries as it was recorded in reports, books and articles, and by learning the present status through interviews with men who controlled the operation and the policies of the monopolies.

The next step was to visit the salt mines and the brine evaporating plants of the salt monopoly and the cigarette and cigar factories, the warehouses and the growers of the tobacco monopoly.

The third and last step was to write a report embodying my recommendations for their reorganization.

Before taking up these three steps in detail, I would like to give you an instance of the attitude of Poland toward the United States of America.

Attitude Towards the United States

We arrived Saturday evening, July 3, and the following day we attended the most impressive Independence Day celebration I have ever witnessed. It was the one hundred and fiftieth anniversary of the signing of our Declaration of Independence and, as you know, the Polish people had sent to help us in our struggle for freedom their two greatest national heroes, Kosciusko and Pulaski. When Poland emerged from the Great

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[1] Paper presented before a meeting of the New York Metropolitan Section of the Taylor Society, November 18, 1926.

War as an independent nation, it gave much of the credit for its existence to Wilson and Hoover. The formal congratulations to the United States of America on this anniversary had been signed by 5,000,000 school children and university students, whose signatures were contained in handsome books piled in front of the platform. These books were recently presented to President Coolidge by Mr. Kotnowski, the Chairman of the Fourth of July celebration.

The ceremonies were held in the largest room in the City Hall and were attended by Moscicki, the President of Poland, by cabinet ministers, governmental officials, army officers, church dignitaries, and many Americans.

At the conclusion of the meeting we went out on the balconies of the City Hall and reviewed the procession as it passed through the large square, to which the opera house, hung with flags and tapestries, made an impressive background. The crowd cheered its army, as it always does, but it went wild when it caught sight of the orphans from the asylums and homes established by Mr. Hoover. By the way, the Poles think so much of Hoover that they have a Square named for him almost in the center of Warsaw.

All over Poland we found an attitude of great admiration and affection for the United States. In one town the children stood on the sidewalk and waved to us because their mothers had heard there were to be some Americans in town that day. The welcome we received everywhere indicated an eagerness for help and the faith that Americans can give them the help they need.

Interviews

The first phase of my work, as I have said, was to get a general view of the two monopolies of salt and tobacco. Much had been written about the history of these industries and their policies and there were many reports on their operation. All of these were translated and studied.

I then talked with the Ministers of Finance and of Industry, the various administrative and technical directors of the monopolies, other Government employees and outsiders who had business dealings with the monopolies.

These interviews were so varied that it was not possible to develop a rigid technic, for it was necessary to get these men to talk freely and without reservation. I made no attempt to inquire into the detail of the methods used in carrying on their business. The one thing aimed at in all of these interviews was to discover the obstacles which prevented these men from accomplishing the results at which they aimed. This of course entailed inquiries as to the aims of these men, and in some cases as to the solutions which they had to offer for their difficulties.

Some of these people spoke English, but the majority did not, so the interviews had to be carried on through an interpreter. This required more time, but presented no real difficulties. An interview through an interpreter is as a rule fairly concise, for while a paragraph is being translated, one has an opportunity to think over what he will say next. It is also true that fewer irrelevant subjects are introduced in a translated interview. Of course a great deal depends on the interpreter and I was fortunate in having Mr. Adam Costomski, who has been in the States four years studying our industries and is with us tonight.

Visits to Mines and Factories

The next step was to visit the mines and evaporating plants of the salt monopoly and the cigarette and cigar factories and warehouses of the tobacco monopoly. In these tours of inspection I visited:

> Three salt mines, one of which is 900 years old, but has enough salt unmined to last 1000 years more. Another mine is comparatively new, but it has resources even greater.
>
> Six brine evaporating plants, almost all of them located in the foothills of the Carpathian Mountains.

In connection with the tobacco monopoly I visited:

> Ten factories producing cigarettes, cigars, cut tobacco, chewing tobacco and snuff.
>
> Four storehouses for raw tobacco and finished products.
>
> Three retail stores, and several growers of native tobacco.

The technic of investigation was to make an unhurried trip through the mine or plant, as far as possible following the route of the material and then to sit down in the manager's office and secure further information. Records were made of stocks of raw material and finished goods on hand, of manufacturing and handling operations, with the number and kind of producing units and the actual production per hour or per day, of wages and working conditions and of methods of control. I secured a statement from the management as to the plant's capacity and the reasons why that capacity was not being used. In cases where it was used I inquired as to the plans for extension and the obstacles which confronted them. This information gave me a basis for comparison of the different plants with one another, as well as with American plants.

In every case I found the managers frank and eager to lay before me all the facts whether they were favorable or not.

Reports

The last part of my task was the writing of two reports embodying recommendations for the reorganization of these two monopolies. These reports could not be limited to any one phase of a monopoly, but had to deal with the industry as a whole and it was therefore necessary to think the matter through from beginning to end before the actual writing could be begun.

The labor conditions were fairly satisfactory: the eight hour day was universal and there were generous provisions for health and disability insurance and for pensions. There was almost no labor turnover and working conditions were good and the relations between employers and employees were apparently cordial. Wages were low, compared with our standards, but slightly higher than in other industries in Poland. The monopolies had to be made more prosperous before higher wages could be expected and it was therefore obvious that these reports should point the way to the elimination of waste and the proper coordination of the different phases of the industries.

In these reports no attempt was made to present arguments for or against the various possible courses of action. Each section began with a brief statement of the unsatisfactory features of the present situation or method in order to establish a need for a change. This was followed by a definite recommendation expressed in as few words as possible: "Do thus and so," and without any qualifying clause. Each recommendation was numbered: in the salt report there were thirty-six and in the tobacco report thirty-three recommendations. This technic was followed so that even in translated form there could be no possible doubt as to what action should be taken in the reorganization of these monopolies.

The Salt Report

The first two pages of the salt report dealt with the present status. In the former Austrian part of Poland the production of salt had been a state monopoly, but this was not the case in the Russian and German parts, where there was one privately owned mine with better natural advantages than obtained in any other mine in Poland. When the Republic of Poland came into existence, the Austrian mines became Government property, but the private mine did not. The sale of salt was in 1924 declared to be a State Monopoly, but the privately owned mine retained the right to produce salt and to export a part of it. The industry was therefore not a complete monopoly.

Unfortunately I am not at liberty to read you the actual recommendations, for the report has not yet been released for publication by the Polish Government. However, I can say that Chapter 2 dealt with "Excess Capacity of Salines." The salt deposits of Poland had been so rich that the Austrian Government had developed the industry far beyond the needs of present day Poland and, therefore, one of the points to be decided was whether the present production capacity of Polish salines should be reduced to equal the normal domestic requirements or maintained at its present level and the excess salt dumped on foreign markets.

Chapter 2 contained five definite and numbered recommendations as to what should be done about this excess capacity.

Chapter 3 dealt with "Improvements in Producing Salines" and took up the mines and brine works one at a time. One section was devoted to Wieliczka, the mine which has been in operation for 900 years. Sub-headings under the mining of rock salt were:

Physical Layout of the Mine
Kinds of Salt to be Mined
Drilling Methods
Transportation of Rock Salt
Milling Rock Salt
Storage and Loading

In the section devoted to the evaporation of brine salt there were the following headings:

The "Vacuum" Process
Operation of Equipment at Capacity
Maintenance of Equipment
Use of Dealers' Bags
Packing in Boxes
Advertising "Vacuum" Salt

Recommendations as to the management at Wieliczka were under the following headings:

Changes in Management
Saving the Time of Workmen
Paying Workmen by Results
Records of Production and Costs

Chapter 4 covered the allocation of production and gave a summary of the reductions in cost which would result from the recommended changes.

Chapter 5 dealt with the distribution of salt in Poland, and Chapter 6 with the export of Polish salt.

The concluding chapter summarized the thirty-six recommendations which had appeared in the preceding chapters.

The Tobacco Report

The same general plan was followed in the report on the tobacco monopoly.

Chapter 1 was an introduction. Chapter 2 covered "The Purchase and Storage of Raw Tobacco." Chapter 3 dealt with "Manufacturing Tobacco Products" and its sub-divisions were as follows:

Number of Factories
Types of Factory Buildings
Remodeled Apartment Houses
Rebuilt Tobacco Factories
Additions and New Buildings
Ventilation
Artificial Lighting
Shipping Facilities
Layout of Factories
Improvements in Operations
Handling Materials
Maintaining Uniform Quality of Output
Manufacturing Boxes and Printing Labels

Chapter 4 dealt with "Distribution of Tobacco Products" and the final chapter with the "Control and Policies of the Tobacco Monopoly."

What action the Polish Government will take on these recommendations remains to be seen.

Visits to Other Polish Industries

Before starting out on my tours of inspection of salt and tobacco plants the Minister of Industry asked me to visit several other government owned industries and some privately owned plants in order to get a fairly comprehensive view of Polish industry.

As you know, Poland is a rather large country. It has an area of 150,000 square miles, which is approximately the same as all of New England, New York State and Pennsylvania, with about the same population, that is, almost 30,000,000 people. We traveled by river steamer, by rail, by automobile and by airplane. Traveling was comfortable: trains were always on time, although the schedules were rather slow; sleeping cars were more comfortable than Pullmans; the motor cars were of the best continental makes, and the roads outside of the cities were good; the airplanes were quite safe and of course very fast; hotels were comfortable, the meals being usually better than in the average American hotel, but the rooms not so good. At a number of places we were guests of the plants visited, for outside of the large cities it is customary for plants to maintain suites of rooms for the entertainment of their visitors.

I visited the following:

A cotton mill with 280,000 spindles and 7,500 looms.
Two wooden mills.
Four coal mines.
A plant for refining lead and silver.
A cement plant.
A nitrate fixation plant.
A steel mill and iron foundry.
A boiler shop and structural iron plant.
A locomotive works.
A government mint.
The oil fields at Boryslaw.
Two potash mines.
Natural gas wells.
A government oil refinery.
A super-phosphate mine.
A sugar refinery.
Water works and sewer constructions.

The visits covered in all about fifty industrial establishments, including those of the two monopolies.

I was agreeably impressed with Polish plants as a whole. A few of them need more working capital and some need modernized equipment, but most of them require better methods of control and quicker turnover of their investment. Managers of the plants visited were open minded and eager to improve their processes. Some traces of American methods were apparent in nearly all plants, and in five of these plants visited I found Gantt Charts being used to good advantage.

I spent a whole day at Chorzow, the nitrate fixation plant belonging to the Government, which was equipped and organized by Moscicki, the President of Poland. This plant is remarkably well laid out and equipped and the organization seems to function like clock-work. The Polish Government has reason to be proud of this plant and of the man who is responsible for its success.. As you know, Moscicki is an electro-chemical engineer and is well known for his discoveries and for the several plants he has built in Poland and in Switzerland.

Interest in management in Poland is centered around the "Institute for Scientific Management," which has been in existence for about two years. It is composed of management experts who are subject to election and at present there are fifty-five members, including thirteen honorary members from foreign countries, six of whom are Americans.

This Institute has published in very creditable form a number of books on management and each month issues a *Review of Scientific Management*. It has organized a series of lectures for engineers and due to its efforts scientific management is now being taught at the Polytechnic Institutes at Warsaw and Lwow, at the graduate schools of agriculture in Warsaw and Dublany and at the Mining Academy at Krakow.

American Methods in Poland

American methods of management are being introduced into Polish industries with good success. There is unfortunately an impression in the minds of some Polish managers, as well as those in other European countries, that American management and mass production mean the same thing, and that therefore American methods are not applicable to their problems. In Poland they have not the great purchasing power which we have in this country and it is therefore impossible to market goods in such large quantities. As a result Polish plants are smaller than ours and must do more manufacturing to order than producing in quantity. They do not realize that the technic of mass production in this country was mastered years ago and that management engineers during recent years have turned their attention to the more difficult task of simplifying the methods of plants which manufacture to order or produce a variety of goods in small quantities. It is these methods which are most applicable to Polish plants.

We can learn a number of things from Polish industries. Their working hours are shorter than ours, for the eight hour day is universal there. They have made better provision in the way of pensions for retired workers.. Their plants are on the average neater and more orderly. They are much more careful to avoid waste of material, and they are more open minded and eager to learn the best ways of doing things.

A month ago at a meeting here, which Mrs. Gilbreth addressed, I made a statement that foreign engineers and managers show a keener interest in American management methods than we show in foreign methods. This is of course largely due to the present prosperity of America—less prosperous nations want to learn how we reached this new level and naturally we are inclined to be satisfied with methods which have given us such good results. Our management is more highly developed and more effective than in other nations, but we should remember that we have had many advantages: peace, natural resources, a pioneering spirit and a freedom for experiment unknown in older countries. Realizing this we should give them freely the best we have developed.

"The Elimination of Unnecessary Fatigue in Industry"

Summer School of the International Association for the Study and Improvement of Human Relations and Conditions in Industry

June 19-25, 1927

BAVENO, ITALIAN LAKES, ITALY

International Cooperation in the Promotion of Scientific Management[1]

A Symposium Representing Czechoslovakia, England, France, Germany, Holland and the United States

Introduction

MORRIS LLEWELLYN COOKE
President of the Taylor Society

It occurs to me to felicitate this audience, and of course in doing so I include our distinguished guests, on their interest in management, a subject so largely in flux and yet one upon which the peace of society throughout the world so largely depends. In the task of developing administration and management into an art and a science, we have more than a man-sized undertaking. But nothing will further this farflung objective more than international cooperation. We can each learn from the other.

American "managers" are perhaps fortunate in their opportunity to function in an environment freer from the trammels of tradition than do some of their neighbors on the other side of the Atlantic. This, of course, facilitates innovation and change. But we are fully conscious that there accompany this situation all the limitations of youth. We seek, therefore, to do all our planning in the light of the experience of our neighbors across the sea who have had so much more experience in government, in industry and in community living itself.

In every country industry and government have been developed under different conditions, and the resulting differences in emphasis have necessarily effected variations in the structure through which each functions. Such differences are not to be deprecated. We must not look forward to ironing out every expression of the national mind—even in the field of management. Progress usually comes about through the clash of ideas and the contrast of one standard with another. The race is young and management barely out of its swaddling clothes.

In his "Shop Management" Taylor called attention to a fact now generally recognized, that the different departments of an industrial plant are rarely in balance as to their relative efficiency. Perhaps because of some special interest or aptitude of the owner, or for some other cause, one department—such as the financial or the sales or the production—will overtop the others in effectiveness. So that in the combination of two plants which have been successfully competing one with the other it very frequently happens that both gain through the mutual adoption of points of strength and the avoidance of sources of weakness, each brought into view through a closer acquaintanceship and a better understanding. Thus it would appear that exchanges between the nations as to their policies and practices in the field of management must necessarily be mutually profitable.

This small gathering tonight is neither the beginning nor the end of such exchanges. You will hear tonight of the First International Management Congress at Prague in 1924, of the subsequent formation of an International Committee on Scientific Management Congresses and of the Second International Management Congress at Brussels in 1925. Plans are now under way for the third Congress in Rome this year and an International Institute of Scientific Management, with headquarters at Geneva, is rapidly taking shape.

It is, therefore, with real satisfaction that the organizations cooperating in this meeting, afford this opportunity for a free exchange of views between distinguished representatives of half a dozen members of the family of nations. And is it not fortunate that we come here to discuss an international matter almost free from controversy—not oil, not rubber, not territory—a subject about which we may entertain widely varying views but which affords no basis for acrimony?

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[1] Addresses given at a joint meeting of the American Management Association, the Committee on American Participation in International Management Congresses, the Management Division of the A.S.M.E., the Society of Industrial Engineers and the Taylor Society, New York, December 9, 1926.

The International Labor Office and Scientific Management

By HAROLD B. BUTLER
Deputy Director, International Labor Office, Geneva

YOU may perhaps have asked yourselves why any branch of the League of Nations should interest itself in the problem of scientific management. I propose to try to answer that question. It is obvious to everybody and needs no elaboration, especially before an audience like this, that the better organization of industry is a vital matter for any industrial country, because on it depends the wages and the welfare and the standard of living and the prosperity of every industrial community in a very large measure. That necessarily became the fact as soon as production ceased to be an affair of the strength and skill of the individual but depended on the smooth running and the efficiency of a large, cooperative enterprise in which the individual was only one small unit.

That is a truth which has been recognized in Europe to a greater or lesser extent. There are industries which are more scientifically organized and conducted than others, but there are certainly some in most industrial countries which have been modernized and improved to a very considerable extent, especially during the last few years. That is true of Germany, true of France, true of England. I know cases in which a complete reorganization and reequipment has been carried out not merely by the employers but by the employers in cooperation with the trade unions. In one particular industry with which I am acquainted, the effect of that has been to treble the wages in that industry in a very short time. But there is still a great deal to be done, and I think it is true to say that up to now these efforts in the direction of more scientific organization have been unsystematic and uncoordinated. They have not been planned on a national scale and still less on an international scale.

Why, then, should an organization which is primarily concerned with social questions have interested itself in this problem? The International Labor Organization, which is the labor department of the League, draws together the representatives of the governments, the employers and the organized labor of all the countries that are members of the League. They not only have regular annual sessions but they are represented by a council of twenty-four persons who meet quarterly, who decide all questions of policy which arise during the interval between the annual meetings and who are responsible for the general direction of the International Labor Office of which I am a member.

The principal endeavor of that organization is to improve social conditions and to promote industrial prosperity generally by the free consultation of those three elements in the community.

I think the answer to the question which I proposed at the beginning is a double answer. We think that this is a matter which is of direct interest to our organization for two reasons: The first is because it seems to us to be at bottom a social question, and in the second place, because it seems to us to be essentially an international question. Perhaps I might try to develop those two points.

One of the functions which is entrusted to the International Labor Office by the treaty of peace is the study of all questions touching every aspect of "industrial life and labor." Those are the words used in the treaty. How far, then, may one properly consider that the subject of scientific management falls within that definition? I think the answer is probably given very much better than I could give it in the words of Dr. Stresemann, the present Foreign Minister of the German Republic, in a speech that he delivered at the Office a few months ago when he came to present, on behalf of the German Government, a window to our new building. He used these words, which I think represent what is felt by many people about this question. He pointed out that industry was revolutionizing society, that it was driving people into great cities and destroying the conditions of life as it previously existed, and he went on as follows: "I personally have great misgivings as to this development. I see that human individuality suffers from mass suggestion and mass psychosis, and I see in the concentration of hundreds of thousands and millions of men on the soil of a single city a hindrance and a check to the development of the individual spirit. I see, too, in the transition from the ancient handicrafts to our present-day undertakings, carried on with millions of capital, a decline of the personal labor which has contributed so much to the culture of humanity, in favor of an industrial system under which a man is no longer himself but is in danger of becoming a mere part of a machine.

And just because I see this danger, just because I do not believe that human culture has gained by the fact that great cities and great undertakings have become essential constituents of the nation, I think it all the more important that a far-seeing social policy should protect the great interests of the state and the peoples against what would otherwise be dangerous in this development."

That is putting the question in its broadest light, perhaps, and naturally no organization which is trying to deal with labor questions could avoid dealing to some extent with questions which form part of the general problem of scientific organization. For instance, we have already a section dealing with industrial hygiene which has naturally been led to devote a good deal of study to the question of industrial fatigue. We have also formed an advisory committee in connection with that section. It comprises some of the most eminent students in that field in the different countries of Europe, men like Dr. Myers of the Institute of Industrial Psychology in London, and men of corresponding caliber in other countries.

You may perhaps ask whether the other aspects of scientific management have anything to do with labor at all, whether they should not be considered entirely by technicians or industrialists. Starting from the point of view taken by Dr. Stresemann, I think it is easy to show that an attempt to treat them on those lines would not be successful; at any rate it would not be successful under European conditions. Take, for instance, questions such as the introduction of new machines, the simplification of processes. Changes such as these cannot be effected without having a very direct bearing on the individual workman, and that means that they cannot be effectively carried out, as I think is generally recognized in this country, without his cooperation.

If you go further than that and come to the questions relating more specifically to management, that is to say, questions of routing, internal organization, selling organization, transportation, and so on, you may say that those things have nothing whatever to do with the workman. Yet those things ought to interest him as much as any other questions which come up for consideration in connection with industry, because on their successful solution depend in a very large measure his own welfare and prosperity. An instance of that was recently afforded by the treatment of the coal situation in England. There the whole struggle turned to a very large extent about those very questions of organization, and the greater part of the inquiry which was conducted by the Royal Commission was devoted specifically to them. It was realized by everybody that the wage question was secondary to, or at any rate was indissolubly tied up with, the general question of the organization of the industry.

That, very briefly, summarizes some of the reasons why the question of scientific organization is to a large extent a social question.

The second reason which I gave was that it was also an international question. The function of the International Labor Office on its research side, and a good deal more than half of its staff are engaged in nothing but research, is to state social problems. In order to state a problem you have to give the facts correctly, and once you have got a correct statement of the facts, you are not a very long way from finding a solution. But without a correct statement to attempt any solution is useless.

We have based our work on the assumption that you can get a better statement of facts about most social problems by considering them as they present themselves not in one country but in many countries.

Economic phenomena are on the whole remarkably similar in whatever part of the world you observe them. At the same time there are national differences which color them, and the question that one often has to determine is whether those national differences are accidental or essential. If you take, for instance, the evolution of industry in the East, which is a thing of comparatively recent but very rapid growth, you find for the most part the conditions under which industry developed in the West repeating themselves with remarkable similarity, and although allowances have to be made for local conditions which are to some extent peculiar, on the whole the experience of western industrialization has been and will be successfully applied as a guide to the development of oriental industrialization. That is just one instance of the sort of thing I mean and the advantage of studying problems from an international point of view is that you can experiment over a wider field.

Sometimes the national study of a problem may lead to erroneous conclusions because the true principles are obscured by national peculiarities. Conversely, it sometimes happens that what is really an essential feature of a problem is wrongly taken to be of only national significance. If you examine a principle internationally, if you try it out under a series of varying national conditions, it becomes far easier to separate the essential from the non-essential and to get at the true presentation of the problem with which you are trying to deal.

Those are the two reasons why the International Labor Office is interested in the subject of scientific management.

Two months ago the Council, or governing body, considered that question for the first time and they considered it in connection with a very generous proposal which had been made by Mr. E. A. Filene, on behalf of the Twentieth Century Fund. He stated that under certain conditions he was prepared to endow an international institute for the study of scientific organization. He proposed that that institute should be created by the cooperation of the Twentieth Century Fund for the United States, the International Labor Office and the International Committee for Scientific Organization, which is presided over by Dr. Mauro, who, I am very sorry to state, is not here this evening. The Institute brings together and coordinates national committees studying these problems in a number of European countries, and it was thought that by the cooperation of these three bodies, something really effective could be done to bring about an intensive study of scientific management in its application to European conditions on an international scale.

Of course the application of those principles which are now more or less common knowledge and common practice here in Europe will require a certain amount of precaution, but under the constitution of the Institute as now proposed, I think that the necessary precautions will probably be provided. The Institute will contain three eminent representatives of American practice, one of whom is well known to everyone here, Mr. Henry Dennison. It will contain four or five technical experts, engineers, from the International Committee, and the International Labor Office will be represented in all probability by one government representative, one employer and one labor representative.

As I have said, the application of American principles to European conditions will require a certain amount of precaution, and that for several reasons. In the first place there is a real psychological difference which cannot be ignored between the American workman and the European workman. It is a peculiar thing that although the American workman is not infrequently a European, his mentality is quite different from that of his own compatriots in Europe.

To define exactly what those differences are would perhaps be a rather hazardous enterprise, but I do not think anyone who has had any opportunity to study American and European psychology can doubt that there are very real differences. Roughly speaking, I think one must say that the European workman is more conservative in his outlook; he attaches a greater importance to the pride of craftsmanship, and strange as it may seem, I think it is true that he is less attracted by the prospect of high wages as such. There are a number of reasons for that, but it would be difficult to enter into them now. I have very little doubt, however, of the fact.

Then again you have got to remember that his situation is very different. The greatest fear in the life of nearly every European workman is the fear of unemployment and it is a risk which he runs to a very much greater extent than the average American workman. It is very much easier, as far as I can judge and as far as I am informed by everyone to whom I put the question, to pass from one job to another, even to pass from one industry to another, here than it is with us. That is a very vital factor when you are considering the introduction of machinery or methods which are likely to reduce the labor force which you require.

Then, again, it will be necessary, of course, owing to a certain prejudice against what are commonly regarded and often very ignorantly described as American methods, to learn more about them. As a matter of fact, very little is known about them, and they are pictured as being something which, as far as I can gather, they are not now even if they ever were. But however ill-founded the prejudice may be, it certainly exists and it will be necessary by a process of education to overcome it, and that process of education will probably not be an exceedingly rapid one.

What is quite certain, however, is that that process cannot be carried out effectively by simply educating the employers. I am far from denying that many of them may need education, but I am quite certain that however much they may be educated they would find it very difficult to introduce certain kinds of improvement in their organization unless their workpeople were educated simultaneously.

We strike another difference which is also an important one. Labor is organized in Europe to a much higher extent than is the case in this country. Most industries have trade unions which cover something between sixty and eighty per cent of the workers in the highly industrialized countries and it will not be possible, I am quite certain, to make very great strides in the direction of better organization where it touches the method of work or the situation of the individual workman unless the trade unions can be brought to see that it is in the general interest of their prosperity and the prosperity of their members as much as in the interest of the employer.

That, I think, is where we may perhaps perform a useful service—by associating to some extent the organized labor of Europe with the study of this movement. Some of us were considerably surprised when at the meeting of our governing body, to which I referred just now, the proposal was accepted and almost welcomed by the spokesman of the labor group as well as by the spokesman for the employers' group. He naturally did not commit himself very far but he said that, provided their standards were maintained, the labor group as a whole, which on that occasion represented nine or ten different nations, after considering the matter very carefully had come to the conclusion that it was in their interest to cooperate in this enterprise. They were ready to study the means to increased production, but all this was with the provision, as I say, that the standards to which they attached importance were not depreciated, particularly as regards hours of work.

That is the plan which is now on foot and which is only waiting final confirmation by the Twentieth Century Fund on the one side and by the governing body of the International Labor Office on the other and by the International Committee on their side to start operating next year. We hope, in fact, to make a start as early as the beginning of February.

There is only one word of warning which perhaps I should utter in conclusion. It seems to be the fate of international institutions to be expected to produce results at a far more rapid rate than any national institution ever achieved. That has been the fate of the League and it has been the fate of the International Labor Office. One of the commonest criticisms of the League seems to be that it has not abolished all possibility of war in the space of seven years. Anyone who expected it to do that I think must have formed a singularly inaccurate view of the natural conservatism of human nature.

International institutions, like national institutions, are things of slow and natural growth. If they were anything else, they would not be destined to be permanent. What has been true of our past experience will certainly be true of our future experience. If anyone expects that at the end of one year or two years this new Institute will have revolutionized Europe and have brought it out of the slough of despond into the fields of paradise, I am afraid he will be disappointed, but I do think that it offers the beginning of a new and very promising movement which may have far-reaching effects. There it is; it is an experiment. I only hope that all of you here will follow it as far as you have the possibility of doing so with sympathy and with a spirit which is not too critical and does not expect miracles to be performed in an impossibly short space of time.

I am very glad to have had this opportunity of speaking this evening and I only hope that if any of you come to Geneva you will pay us a visit, because I can assure you that you will all be very welcome.

Experience in International Cooperation

By STAN SPACEK
Minister of Public Works, Prague, Czechoslovakia

WHEN in the year 1919 as a member of the political economic commission I stepped for the first time into the office of the Managing Director of the Taylor Society, I never thought I should sometime have the opportunity and the great honor to address you and to express to you the sincerest appreciation of the Czechoslovak nation for a world important activity which, as I shall inform you, is destined to be of extraordinary international significance. This rare opportunity is for me a great distinction and it obligates me to tell you briefly what, with your help, has been done in Europe.

This year for the first time I had an opportunity to visit the western part of your country and to see the results of the work of the American people and American engineers in changing your wonderful country and meeting the people's needs through the construction of highways and the irrigation of the desert country. I could see the application and the results of scientific management, labor saving devices and methods and correct planning and economical management in both engineering, construction and in agriculture.

The Eastern states of America in their industrial centers also show many wonderful results of scientific management in all sorts of human activities and are serving as a practical school for all the world. The report of the Commission of the Labor Party in England, visiting this country through the courtesy of the Daily Mail and studying conditions here, tells us that the economical production in American factories and the high standard of living of the American people have been reached largely through the application of the principles of scientific management. Here in the American atmosphere the Europeans learn to criticize and evaluate quite differently their old style political and national differences and misunderstandings. Here they recognize what Europe needs and here they learn the principles of cooperation, the main basis of scientific management.

The suggestion to American engineers that the first International Congress of Scientific Management be held in Prague marked a new epoch in world history, it is safe to say, as the American attendants at this Congress were able to show the representatives of many nations what scientific management really means for all production and especially for industry.

The representatives of the Czechoslovak government as well as of scientific circles have many times and heartily expressed their appreciation of the fact that at this congress the principles of scientific management as a basis for the right democracy as well as for better living were proclaimed for the first time. This congress for the first time *persuaded the labor parties* of the advantage of systematic cooperation. The American speakers were better able than we Europeans to point out to them the urgency and necessity of adopting this economical science in all human activities. Permit me here to express again before the representatives and leaders of the scientific management movement our appreciation of America's cooperation and to mention the names of the world famous workers who accepted the honorary presidency of the Prague Congress. They are Herbert Hoover, Secretary of the Department of Commerce in Washington, D. C., engineer, administrator and economist, and Dr. T. G. Masaryk, President of the Czechoslovak Republic, philosopher and economist. To these two honorable names we have to add the name of the third splendid worker, Dr. B. Stepanek, the first Czechoslovak envoy to the United States, who, as honorary member of the American Committee, directed from here all preparatory work for the Congress in Prague. It is impossible to mention here all the names of Americans and Europeans who cooperated. I wish only to say that all the details are in the report of the Congress, published in English by the Masaryk Academy of Prague. I want to mention again how much we appreciate your cooperation and help in sending us your books and magazines for the American library in Prague.

At the Congress in Prague a resolution was passed that a joint committee of the American Engineering Council and the Masaryk Academy should organize for an International Congress of Scientific Management to meet every two years in different countries. The Congress in Prague aroused a great interest in scientific management. Very soon after an International Committee for Scientific Management was organized. The very well known Italian engineer, M. Francesco Mauro of Milan, who was elected president, with his political and economic experience, helped greatly to further this movement. Besides this national committees were organized in several countries to promote this movement. The activity of each national committee has to be reported to the International Committee which issues a special bulletin on scientific management, edited by the international council of editors and by the general secretary, Dr. Verunac, in Prague, with the financial help of the Czechoslovak government. Our government always pays attention to this movement which was sincerely appreciated at the 1926 conference in Paris. After the First International Congress several conferences were held in Prague and another International Congress was organized in Brussels which was proclaimed the Second International Congress and at which the Prague resolution was fully accepted. Besides this an international conference was held in Warsaw in May, 1926, under very peculiar conditions. The revolution broke out there during the conference, yet all meetings were held in the home of one of the best workers in Poland, Professor K. Adamiecki, where all members of the conference enjoyed through the whole week the sincerest hospitality. We must mention the understanding of the principles of scientific management which was shown by the Polish government on this occasion. The Polish government was one of the first to invite efficiency engineers, of whom Mr. Wallace Clark was one, to make an economic analysis of government implants. The conference in Poland was completed by the international conference in Paris in June, 1926. The representatives of nine nations who attended decided to recommend to the American Committee, the Engineering Council and the Masaryk Academy of Work that the next Congress be held in 1927 in Italy. They further decided to publish in the international bulletin original articles in French, Italian, German and Spanish as well as in English. The progress of this conference was furthered through the cooperation of M. F. Mauro, the President, who directed all the discussions in a splendid way, and by the help of the French and Belgian representatives, M. M. H. le Chatelier, M. Charles de Freminville, M. Landauer and others. The International Committee is trying to make further connections with prominent workers in Austria, England, Holland and Germany. It would be useless to say how important is the further cooperation of the Americans who so gladly started this movement. All Europeans wish heartily to have America at the head as the leader in this movement, as this will be of greatest assistance in furthering our aims in this important work, which we do with a great enthusiasm. We believe that this is the safest way to create better relations between the nations on the basis of better economy. It is necessary that the richer and stronger nations should help the poorer and smaller nations by teaching them newer labor methods, better use of natural resources and better development of the natural talents of the people through the elimination of waste and on the basis of sounder economic theory.

This international economic cooperation has another significance. World peace can never be accomplished on the basis of political and diplomatic agreements unless at the same time attention is given to the best development and use of natural resources, to the judicious use of the natural national spirit of peoples properly developed through the reciprocal exchange of works and natural resources, the building up of a new and proper education, a new kind of thinking based on the principles of scientific management preceding all human activity. In other words, the traditional and conservative kind of thinking must be changed. The result will be a different kind of living and greater cooperation between the nations.

We have, therefore, to welcome another very important American idea, accepted and promoted in America by Mr. E. A. Filene and Mr. Henry S. Dennison; namely, to create in Geneva in connection with the International Labor Office, an Institute for the International Rationalization of Production. This will take care of the exchange of information between national institutions of this kind, facilitate personal relations between specialists and study all problems in relation to the rationalization of production.

We have often discussed another suggestion—that of organizing international educational courses for the study of scientific management. We are trying to do something along this line in Prague in a very short time and extend an invitation to all nations to cooperate heartily.

The problem of the reeducation of a nation in the light of scientific management principles is immensely important and also very difficult because it is necessary to reeducate the people in these principles. For this purpose an international handbook on principles of scientific management should be published, translated into all languages and sold at a very low price. This could be used as splendid propaganda and should become the international Bible of the science of labor and human economy.

It would be a great help if all teachers and professors could be acquainted with the principles of scientific management because they would then immediately teach their students from this standpoint and they would very soon try to develop in young students a right sense of rational economy. Without this we can hardly imagine the right democracy, as the study of scientific management itself changes the people and makes them more perfect.

We are trying in Czechoslovakia to obtain for the people a higher standard of living and to obtain it through the working out of better social laws and better distribution of work. It will interest you to know that the Czechoslovak women are greatly interested in scientific management and have spontaneously asked for cooperation because they know they are spending more than thirty billion kronin in their homes, a sum which is more than twice the national budget for a year. It is, therefore, very important that the best economic education should be provided for the women, as good home and human economy is the basis on which the economy of the nation and the government rests. Here in your country much has been done in home and human economy and, therefore, our women are studying with great enthusiasm the activity of American women and economists.

The reeducation of the nation will be obtained most quickly by reeducating the young men. Our young men, therefore, try to live for a short time in the United States and to learn what the American spirit means in a practical way. And the generous people of America are going to invite Europe again to send her best educated sons to learn American methods of working and living.

The Ford Company in Detroit has in its international school about 300 young men from about thirty-five nations. Twelve of these are Czechoslovak students. Germany has placed more than one hundred engineers in American plants. Twenty have been received into the A.S.M.E. by the Secretary, Mr. Calvin W. Rice, the international father of all foreign engineering students. This is the best school for scientific management and also the best way to develop greater cooperation between the nations.

It is very important that through the aims of Americans the question of scientific management is going on the international forum where it will help to create a new basis for sounder economic politics.

A further and very important step should be the application of the principles of scientific management to the administration of governments, where problems are very similar the world over. It would be quite possible, therefore, to organize a special international committee for the elaboration of general basic standards for economies in governmental and public administration. This would be very helpful in bringing about better public administration in all countries and this again would be another step toward the cooperation of the nations on an economic basis.

These reasons should be sufficient to enlist support in all countries, since the national and international corporations take care to spread the knowledge of scientific management as a basis for sounder development of the nations and more rational economic politics. It would be possible in this way to develop an activity in European corporations similar to that of the American corporations of which the Taylor Society, with its excellent bulletin—a real lexicon of scientific management—is the leader.

Permit me to extend on this rare occasion in the name of European scientific management workers and especially in the name of the Masaryk Academy and the Czechoslovak government the sincerest congratulations on the results of your beneficial activity and great appreciation for your cooperation and your help in our national and international activity. I wish to assure you that my small nation, whose constitution was modeled on yours, and whose liberty after three hundred years of oppression was proclaimed in the same Independence Hall in Philadelphia, will always look to great America as the leader towards the right democracy and liberty.

American Methods in French Management

By CONRAD D'ANGELO
Consulting Engineer, Paris

I CAME eight years ago to America to get a big dose of scientific management. After the war in Europe, and principally in France, we needed to put some order into our industry and our commerce, and when I returned I had some experiences in which I applied some of the principles and methods that I had learned in your country. As Mr. Butler has said, it is very hard, of course, to introduce American methods throughout all Europe, yet with patience and interest we have succeeded in introducing some of them with wonderful results.

I have had experience mainly where I could employ only people who did not know anything about the work which was expected from them. I remember once we were looking for workmen and it was very hard to get them in Paris, as our factory national conference was held in Warsaw in May, 1926, under very peculiar conditions. The revolution broke out there during the conference, yet all meetings were held in the home of one of the best workers in Poland, Professor K. Adamiecki, where all members of the conference enjoyed through the whole week the sincerest hospitality. We must mention the understanding of the principles of scientific management which was shown by the Polish government on this occasion. The Polish government was one of the first to invite efficiency engineers, of whom Mr. Wallace Clark was one, to make an economic analysis of government implants. The conference in Poland was completed by the international conference in Paris in June, 1926. The representatives of nine nations who attended decided to recommend to the American Committee, the Engineering Council and the Masaryk Academy of Work that the next Congress be held in 1927 in Italy. They further decided to publish in the international bulletin original articles in French, Italian, German and Spanish as well as in English. The progress of this conference was furthered through the cooperation of M. F. Mauro, the President, who directed all the discussions in a splendid way, and by the help of the French and Belgian representatives, M. M. H. le Chatelier, M. Charles de Freminville, M. Landauer and others. The International Committee is trying to make further connections with prominent workers in Austria, England, Holland and Germany. It would be useless to say how important is the further cooperation of the Americans who so gladly started this movement. All Europeans wish heartily to have America at the head as the leader in this movement, as this will be of greatest assistance in furthering our aims in this important work, which we do with a great enthusiasm. We believe that this is the safest way to create better relations between the nations on the basis of better economy. It is necessary that the richer and stronger nations should help the poorer and smaller nations by teaching them newer labor methods, better use of natural resources and better development of the natural talents of the people through the elimination of waste and on the basis of sounder economic theory.

This international economic cooperation has another significance. World peace can never be accomplished on the basis of political and diplomatic agreements unless at the same time attention is given to the best development and use of natural resources, to the judicious use of the natural national spirit of peoples properly developed through the reciprocal exchange of works and natural resources, the building up of a new and proper education, a new kind of thinking based on the principles of scientific management preceding all human activity. In other words, the traditional and conservative kind of thinking must be changed. The result will be a different kind of living and greater cooperation between the nations.

We have, therefore, to welcome another very important American idea, accepted and promoted in America by Mr. E. A. Filene and Mr. Henry S. Dennison; namely, to create in Geneva in connection with the International Labor Office, an Institute for the International Rationalization of Production. This will take care of the exchange of information between national institutions of this kind, facilitate personal relations between specialists and study all problems in relation to the rationalization of production.

We have often discussed another suggestion—that of organizing international educational courses for the study of scientific management. We are trying to do something along this line in Prague in a very short time and extend an invitation to all nations to cooperate heartily.

The problem of the reeducation of a nation in the light of scientific management principles is immensely important and also very difficult because it is necessary to reeducate the people in these principles. For this purpose an international handbook on principles of scientific management should be published, translated into all languages and sold at a very low price. This could be used as splendid propaganda and should become the international Bible of the science of labor and human economy.

It would be a great help if all teachers and professors could be acquainted with the principles of scientific management because they would then immediately teach their students from this standpoint and they would very soon try to develop in young students a right sense of rational economy. Without this we can hardly imagine the right democracy, as the study of scientific management itself changes the people and makes them more perfect.

We are trying in Czechoslovakia to obtain for the people a higher standard of living and to obtain it through the working out of better social laws and better distribution of work. It will interest you to know that the Czechoslovak women are greatly interested in scientific management and have spontaneously asked for cooperation because they know they are spending more than thirty billion kronin in their homes, a sum which is more than twice the national budget for a year. It is, therefore, very important that the best economic education should be provided for the women, as good home and human economy is the basis on which the economy of the nation and the government rests. Here in your country much has been done in home and human economy and, therefore, our women are studying with great enthusiasm the activity of American women and economists.

The reeducation of the nation will be obtained most quickly by reeducating the young men. Our young men, therefore, try to live for a short time in the United States and to learn what the American spirit means in a practical way. And the generous people of America are going to invite Europe again to send her best educated sons to learn American methods of working and living.

The Ford Company in Detroit has in its international school about 300 young men from about thirty-five nations. Twelve of these are Czechoslovak students. Germany has placed more than one hundred engineers in American plants. Twenty have been received into the A.S.M.E. by the Secretary, Mr. Calvin W. Rice, the international father of all foreign engineering students. This is the best school for scientific management and also the best way to develop greater cooperation between the nations.

It is very important that through the aims of Americans the question of scientific management is going on the international forum where it will help to create a new basis for sounder economic politics.

A further and very important step should be the application of the principles of scientific management to the administration of governments, where problems are very similar the world over. It would be quite possible, therefore, to organize a special international committee for the elaboration of general basic standards for economies in governmental and public administration. This would be very helpful in bringing about better public administration in all countries and this again would be another step toward the cooperation of the nations on an economic basis.

These reasons should be sufficient to enlist support in all countries, since the national and international corporations take care to spread the knowledge of scientific management as a basis for sounder development of the nations and more rational economic politics. It would be possible in this way to develop an activity in European corporations similar to that of the American corporations of which the Taylor Society, with its excellent bulletin—a real lexicon of scientific management—is the leader.

Permit me to extend on this rare occasion in the name of European scientific management workers and especially in the name of the Masaryk Academy and the Czechoslovak government the sincerest congratulations on the results of your beneficial activity and great appreciation for your cooperation and your help in our national and international activity. I wish to assure you that my small nation, whose constitution was modeled on yours, and whose liberty after three hundred years of oppression was proclaimed in the same Independence Hall in Philadelphia, will always look to great America as the leader towards the right democracy and liberty.

American Methods in French Management

By CONRAD D'ANGELO
Consulting Engineer, Paris

I CAME eight years ago to America to get a big dose of scientific management. After the war in Europe, and principally in France, we needed to put some order into our industry and our commerce, and when I returned I had some experiences in which I applied some of the principles and methods that I had learned in your country. As Mr. Butler has said, it is very hard, of course, to introduce American methods throughout all Europe, yet with patience and interest we have succeeded in introducing some of them with wonderful results.

I have had experience mainly where I could employ only people who did not know anything about the work which was expected from them. I remember once we were looking for workmen and it was very hard to get them in Paris, as our factory was located in a part of Paris that had a very bad reputation. I advertised there, and the people who came were very low people. Among them we had three Apaches. Apaches are more than pickpockets, but we call them pickpockets here. There were two old women, one of whom was almost blind, and a Negro girl. By means of scientific principles we could teach all of these people a part of the work we expected from them. Of course the three Apaches left a short time later, but one, I remember, became a very good workman, and later told me I had saved him from prison. The Negro girl was able to take off the bastings of the garments we manufactured, and her physical condition improved. The blind woman was able to fold the finished work and pack it, which she did very carefully and very quickly.

I have given you only a few examples of what has been accomplished by means of the application of American principles. In France and Europe we do not call them scientific principles but American principles, and, in fact, I think that we should not give them any other name. They come to us from you by means of demonstrations. You kindly show us in this country anything that has been a success, and demonstrate to us anything that is efficient. Therefore, we cannot call them anything but American principles. For this we are very grateful and it is a privilege for me to have been among you.

The Management Movement in Germany

By **IRENE M. WITTE**
Contributor to Management Literature, Berlin

MR. BUTLER has already given an admirable outline of conditions in Europe and in Germany as far as American scientific management and its application to European industry is concerned. Dr. Spacek has also touched upon some problems which we in Germany, as well as in all other countries, have to solve and which we are trying to solve with the help and cooperation of other nations.

I shall not try to give you an outline of the situation in Germany with regard to the formation of a national and international management movement.

Germany as a large industrial country is at present up against much the same problems in management as are other European countries, or, I think it is quite safe to say, as is the entire industrial world. We all recognize that we are facing a new industrial era of understanding and goodwill not only in our own country but also among the nations of the whole world.

In the last analysis, the problems to be dealt with and to be solved differ, in my opinion at least, only to a certain degree. Problems of labor, of personnel work, of psychology, of the human element in industry, of production control, and so forth, are problems to be found wherever industrial work is going on.

I am glad to have an opportunity tonight to say that America has in many fields, especially along the lines of scientific or industrial management, given us much inspiration and stimulation. The United States has been an outstanding example to us in Germany of the true spirit of cooperation.

During the last few years a strong and powerful movement has sprung up in Germany based on the belief that better methods of management in all sorts and conditions of life are imperative. I am glad to be able to tell you that the feeling is universal in Germany that in such a degree as our national management movement grows and enlarges, international cooperation and some means of an international exchange of ideas and experiences must be the instrument whereby the best for mankind is really attained.

The meeting of the IRI at Zurich, the International Accountants' Congress at Amsterdam, as well as the International Standardization Conferences in America this year, which were attended by people from all nations of the world working along these lines, showed ways of progress that in my opinion give hope to the belief that scientific management applied to our own problems will help us to find the One Best Way for true international cooperation in this field.

I think one of the finest examples of international cooperation is to be found in an International Association of Astronomers (I do not know if that name is correct) where all new problems and all research work are divided among the nations cooperating, thus insuring the elimination of all duplication of work and the most efficient solution of new problems.

We, in Germany, can date the first steps towards a more efficient management of our factories and commercial enterprises back to some time before the war, but it is only recently that we can speak of a National Management Movement in Germany, including our universities, high schools, societies and, of course, our industry. It is only recently that we have been trying to combine all our efforts along these lines to attain one common goal, to find certain standards or formulae of efficiency for reducing all these factors to one common denominator.

In our Reichskuratorium fuer Wirtschaftlichkeit we have the Federal Government plan which is acting as a clearing house in this endeavor. The Society of German Engineers, der Verein deutscher Ingenieure, together with its Management Division, Arbeitsgemeinschaft deutscher Betriebsingenieure, and the German Standardization Committee are devoting much time and energy to the simplification of work and to greater efficiency.

Similar to the Taylor Society or the Society of Industrial Engineers or the American Management Association we have the Organisatoren Verband, a society uniting all persons doing consulting work or interested in this phase of industrial life, and aiming to promote their work and raise professional standards. Although I cannot even try to give you in a few minutes an outline of the management work we are doing at present, I think I should not stop without mentioning the work being done in the Research Laboratories of our Scientific Institutions and in the Technical Universities, as for instance, at Dresden, where Professor Sachsenberg is working along the lines of rhythm in work and elimination of fatigue.

I know that all these and several others are in touch with organizations outside of Germany, exchanging experiences and cooperating to the mutual benefit of both sides.

In concluding, I think I am speaking for the entire management movement in Germany when I say that we are and always have been at all times willing and glad to take part in any true work of international cooperation.

The Human Factor

By C. H. VAN DER LEEUW, Vice-President IRI
Rotterdam

I WILL make no attempt to survey conditions as far as scientific management is concerned in Holland. The subject was fully covered by our first speaker, Mr. Butler, as conditions in Holland are very similar to those described by him. Perhaps the mistakes made in Holland in introducing this system have not been quite so serious and we have, therefore, fewer difficulties to overcome, but the important Taylor principle, that intimate and friendly cooperation between management and men should be maintained, has been very often forgotten. One very gratifying instance, however, of the way in which the idea of scientific management has penetrated in our country is furnished by one of the departments of our municipal government, the Public Works Department, in its work of planning new parts of our fast growing city. They have adopted the method of making a complete survey of the whole existing city, with the assistance of some eighty or ninety Delft students and engineers of the Polytechnical University of Delft. Passenger traffic, traffic of vehicles, location of industries, the warehouses connected with them, and the traffic of these, have all been studied. Plans for the future city quarters have been based on this survey. From what I know of municipal governments, I should say they are not very open to scientific management. It is quite an achievement, therefore, that this idea, coming from your great country, has really attacked the heart of at least one of the members.

The new international organization will, I am quite sure, bring to our country a good many benefits. It will bring inspiration to our managers to want to do, to use that wonderful word of Frank Gilbreth's, things in the One Best Way; it will also provide methods for doing them and help to find still other methods.

I would like to say just a few words from the standpoint of that small international organization with a very long name. I am very glad to state that we have cut that name down to three letters, IRI.[2]

We are delighted with America's cooperation in this new development because in America more than anywhere else, so much stress is laid upon the human factor in scientific management, both from the moral and the practical standpoint. In this country you have succeeded in convincing people that it is not only a matter of feeling to pay attention to the human element but also an economic necessity, and that very often makes a greater appeal to employers.

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[2] IRI has been adopted by the International Association for the Study and Improvement of Human Relations and Conditions in Industry as its symbol.

The IRI from the very beginning of its existence some three or four years ago has always emphasized this point and got a whole-hearted cooperation from American members, especially in the Council meeting of this year held at the Rigi, where we were privileged to have Mrs. Gilbreth with us. I may, perhaps, quote one or two sentences from reports connected with this organization. First, from the introduction to the report of the 1925 Congress: "Men remain the pivot around which industry must always evolve." Some of the resolutions passed at this last Rigi Council meeting of 1926 follow: First, scientific management is only really scientific insofar as it takes every industrial factor into consideration, with emphasis on the human factor; second, it is an essential duty of industry to eliminate all unnecessary fatigue; third, industrial welfare or personnel work should always go hand in hand with factory legislation, the establishment and maintaining of good working conditions being a first charge on industry.

The main work of the IRI for some time to come will be, I imagine, the study of the human element and all its relations in industry. This, of course, will bring us into contact with many managerial and other problems as we shall have to watch for any attempt to dwarf the human element in applying some of the new methods. I suppose we shall have to carry on this work until the day when everyone in industry fully recognizes the necessity of paying full attention to the human element.

Personally I should like to say that I consider any industry a failure where those employed in it do not have full scope for their development, physically, emotionally and mentally, and I think the belief that industry could exist only for industry's sake is one of the superstitions of our present day.

An International Science of Management
A British View

By W. H. O'NEILL MANNING
National Institute of Industrial Psychology

THE value of international cooperation in the development of a science of management may, I think, be demonstrated from several different standpoints; but there are two in particular to which I wish to confine my remarks tonight. The first is derived from a study of recent industrial experience in Great Britain, whilst the second relates to the bearing on the present problem of some general principles of scientific method.

Mr. Butler has already, in his excellent address, drawn attention to the existence of certain significant differences between the industrial conditions of Europe and those of America, and has indicated some of the conclusions to be drawn from a consideration of these facts. In view, however, of its great importance, I should like to dwell a little further on this theme. It is, I believe, a matter of common knowledge that the relatively few experiments in scientific management which have been attempted in England have met with a somewhat discouraging reception. The prevailing attitude on the part of labor has been one of supicion and distrust and even, in some cases, of open and pronounced hostility. This unfortunate result has led to a corresponding reaction on the part of the employers concerned: disappointment born of their misguided venture, and unwillingness to risk further industrial friction in an unprofitable cause.

In seeking to account for this situation, one turns naturally to a record of the actual circumstances in which the experiments mentioned took place. Here, it must be admitted, lies at least one cause of their lack of success. Imperfect and superficial knowledge, on the part of employers, of the principles and practice of scientific management; undue stress on the mechanical side of the question and neglect of the human element involved; a lack of open-handed dealing and a consequent failure to win the confidence and cooperation of the men: these factors have all played their part in fostering a misunderstanding of, and an active opposition to the application of so-called "American methods" to British industry.

It seems to me, however, that the ultimate explanation of this attitude is to be sought in a wider region of facts; namely, in the historical, social and economic background of the British labor movement, and in the more or less characteristic outlook and habits of mind which those backgrounds have largely conditioned. That this is true is evidenced by the nature of the reasons usually given by workers in objecting to the introduction of scientific management. There is, firstly, a general distrust of the aims and motives of employers, based on past experience and on ignorance of the new system and its methods. Secondly, there is a fear that the adoption of the system will result in "speeding up" and overstrain; thirdly, that it will lead to overproduction, wage cutting, and eventually to unemployment; fourthly, that the hard-won right of collective bargaining will be imperilled; and lastly, that the worker will be deprived of the power and privilege of his long inheritance of craft knowledge.

That these fears are very real factors in the situation and that they are not entirely peculiar to the mental "makeup" of the British workman is shown by the history of the management movement in the United States.[3] But undoubtedly their comparative strength and influence differ considerably in the two countries, owing mainly to those differences in industrial background to which I have already referred. The growth of trade unionism in Great Britain in the past fifty years has been widespread and rapid, and has produced a series of highly organized groups whose general and specific characteristics are reflected in the reactions of their individual members. These organizations, founded on craft distinctions, exhibit the stability and the relative homogeneity of outlook that arise from the possession of common occupational interests, customs and traditions. On the other hand, they also tend to promote a narrowly conservative attitude, suspicious of new systems and changes in practice whose final outcome cannot be clearly foreseen.

It should not, however, be assumed that the existence of this attitude implies any necessary opposition to scientific methods as such. The experience of the National Institute of Industrial Psychology in England, during the last six years, proves conclusively that this is not the case, and that a scientific procedure based on an adequate knowledge and appreciation of the human aspects of the situation may win not only the consent of the workers and trade unions but their wholehearted approval and cooperation. I believe that likewise, with the proper exercise of tact and caution, and with a due allowance made for various differences in racial, social and economic psychology, the principles of scientific management, which have proved so successful in this country, can be, and will be adapted to the needs of British industry. Moreover—and this is the point which I am anxious to stress—the fruits of this enterprise should not be merely local or national. If the experiment enables us in any way to separate the essential from the non-essential, as Mr. Butler has put it, and thereby to improve its technique and principles, it will perform a genuine service to the science of management itself.

This conclusion may be reinforced from another and more general standpoint, that of methodology. Scientific management, as the name connotes, is essentially an attempt to place industrial organization on a scientific basis; to substitute for the haphazard methods of traditional practice an orderly and systematic procedure founded upon a thorough and unbiased study of the facts. Now there are two implications of this method which are of special interest in the present connection. These are, firstly, that the facts on which our principles are to be based should be drawn from as wide and varied a field as possible, in order that negative instances as well as positive may be observed and that all relevant factors may be recognized and appraised; and secondly, that in the compiling and collecting of evidence the time and labor of those engaged should be so coordinated and conserved that maximum results may be obtained from their research.

The bearing of these considerations on the study of industrial problems will, I think, be readily appreciated without specific illustration. How then, we may ask, can international cooperation help us to realize these ideals of science in the field with which we are here concerned? In speaking on a similar topic, a few years ago, Mr. D. R. Wilson, Secretary of the Industrial Fatigue Research Board in England, offered an interesting and valuable answer to this question. He suggested that industrial research should be placed virtually on an international basis by pooling resources throughout the world, and that for this purpose the International Labor office at Geneva would provide an admirable coordinating authority. You have already learned tonight that, through the bounty of Mr. Filene and the generous cooperation of Mr. Dennison and his colleagues, his suggestion is soon to become an established fact. Meanwhile there are, I think, several practical ways in which individual nations can make an immediate contribution to the work of the Geneva

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[3] Cf. R. F. Hoxie's "Scientific Management and Labor," the report of the 1915 investigation of the United States Commission on Industrial Relations.

Institute. Each country might choose some representative body or organization to act as a clearing house for all information available on the subject within its own borders. This information should include a list of the institutions engaged in the study of any aspect of scientific management, and a record of the work which has been, or is being, undertaken by them in the various fields. The next step would be to coordinate the results thus obtained and to publish them in a convenient and accessible form from time to time. By these and similar means the different scientific and industrial organizations would become acquainted with the stage of progress reached in their own and other countries, and would thus be enabled to eliminate the waste of time and labor involved in needlessly duplicated research. Finally, the provision of opportunities for students of one country to come into living contact with the social and industrial conditions of another would do much to facilitate the growth of mutual understanding and knowledge, and the advancement of those human sciences on which the welfare of mankind so largely depends.

Conclusion

By ROBERT T. KENT
Superintendent of Prison Industries, New York State

WE HAVE heard a great many nice things about ourselves tonight. I am afraid our guests do not know us as well as we know ourselves. We have on our company manners, and I think we should approach this subject of international cooperation in management congresses with a great deal of humility.

At Prague the note was stressed that cooperation—international cooperation—in the science of management was one of the surest means of preventing war. What we saw there, what we learned there, convinced me at least that that is true. The association of men and women in earnest study of the same problems, seeking to achieve an ideal, seeking to accomplish some good in the world, is bound to remove all distrust and mutual dislike which lead to war. The more we can have of such congresses, characterized by the spirit which was exhibited at Prague, the better off will be the world.

We in America have but little appreciation of the difficulties that are besetting Europe in these reconstruction times. They have asked our help in approaching their industrial and reconstruction problems. We are ready to give it; we are glad to give it. The only thing is to find out how. Removed three to five thousand miles away with little appreciation of the difficulties being undergone, it is hard for us to decide just how to help. So the Committee on American Participation in International Management Congresses has done a characteristic American thing. It has passed the buck. Just yesterday we had a meeting on the congress to be held in Milan next year, and we said to Mr. Spacek, who is here to help organize that congress, "You tell us what you want help on and then we will find the men who will tell you how to do it."

There is a slight element of humor in this situation. Mr. Spacek, and some of our friends on the other side of the water, seeing that we have done well in a few things, think we do well in many and all things. For instance, they asked us to show them how to run a municipal government. We said we should be very glad to include municipal government in the agenda of the congress but that we should go there to listen and to learn.

Seriously, America wants to help. You have asked a committee made up of representatives of the Taylor Society, of the American Society of Mechanical Engineers, of the Society of Industrial Engineers and other organizations to help you make up the program for this next congress. I want to say to you that we are but the instruments. When you ask those societies for help, you are not asking them as societies, you are asking the engineering profession of the United States, and as representatives of the engineering profession we are willing to draft men from that profession from all over the country to serve your needs.

By HENRY S. DENNISON
President, Dennison Manufacturing Company, Framingham, Mass.

I AM going to have a very interesting personal opportunity for the next few months to get established this Institute which shall serve as a point of incitement as well as a clearing house for European ideas and experience along the broad lines that we are now beginning to describe as scientific management. You have undoubtedly felt tonight something of the tone of readiness with which Europe will welcome the beginning of such an institution.

It has been extremely fortunate and very significant that during the preliminary work that has been going on for the past year everyone, without exception, has shown himself willing to go almost any length to assure unanimity and thorough cooperation in preparing the field for this sort of work. It would have been extremely easy for several movements starting independently to have gone their independent ways. They have, on the contrary, gone out of their way to join and to make one great movement of it. The Institute, we hope, will serve as the center, the office, as it were, where the International Congress will be perhaps nearer the field force. They are locked together by membership on the board, and having clearly defined functions to perform, will, I expect, work permanently, effectively and smoothly together.

The other associations that have already been at work in the field, of which you have heard something tonight, are showing an equal readiness to join hands to fulfill their part of the work and help the Institute to fulfill its part. Of course it is clear that the work of the Institute will not be well done until it has provided for the bringing together of European business men to help European business men.

America's share will be simply at the beginning because we happen to have been through it and to know that it is good. There are ideas and methods in Europe today superior to anything we know. They have not developed the habit of bringing those ideas out into the open, somewhat unblushingly, shall I say, at times, as we have. They have but to make that start of opening out and exchanging their own ideas, those that are now working successfully, and a great deal will be accomplished. We, I hope, will have much to contribute, but we shall do our share when it is finally established, and only a central share at the beginning, as I say, because we have been in it and have developed the institutional forms through which we can exchange that information and have it ready for exchange there.

I suppose that in the heart of every man and woman here one of the dearest hopes is that we shall be able to do our mite to develop management into a science, to develop the application of that science into a great profession. It would be impossible for a science to develop within the confines of a single country, no matter how great and how big and how varied it might be. The seat of a single national mind is not broad enough to develop a science; driven from within by its own nature, a science must go out to sympathetic minds throughout all the world. It always has. Every great profession (the astronomers' profession is no exception) has gone to the world. No profession knows a national boundary. It is a profoundly significant step that now before it can count itself as established in any way the profession of management should be taking this step which follows in the path of the older professions. It will be enriched immensely thereby. We should go to Europe with no idea of gain, but we cannot go without gain. It will enrich the science of management in the United States immeasurably to do even a small bit to help develop the science of management in Europe. We need the broadening, as we here know, in spite of the flattering words of our friends from across the Atlantic. We need the deepening and the enriching in our practice of management here that we shall get by opening out to the minds of Europe.

It has been noticed by all of you, I have no doubt, that our American business men have stiffened in their determination to carry through in cooperation with employees in scientific methods of management since we have been told by our British cousins how good we are.

It has been, I think, truly said that one of the many steps necessary for the definite establishment of international congresses will be the working together of all nations upon these practical problems of everyday life, the practical problems of business management. I shall be deeply gratified at the chance to help in even a small way. I shall call freely and without hesitation upon anyone and everyone of you for your contributions if I find that they can be made use of there, and I shall do it without the least doubt that you will back us all up.

Third International Management Congress

ROME, ITALY

September 4-10, 1927

News of the Local Sections

Central New York

Announcements of the February meeting of the Central New York Section gave promise of another worthwhile program for February 22 when the section was to join with the Central New York Purchasing Agents Association with J. C. Howell, Vice-President of Brookmire Economic Service, scheduled to speak on "Business Conditions Today and Tomorrow."

Central Ohio

This youngest member of the local section group continues to hold regular meetings with increasing interest. On January 26 H. H. Vaughn discussed the problems connected with the selection of employees. This was to be followed by a symposium on February 23 on the adjustment of employees to variations in the amount of work in different localities.

Eastern Massachusetts Section

The Eastern Massachusetts Section met at the Twentieth Century Club in Boston February 17. R. T. Haslam, Director of Chemical Engineering at M. I. T., presided and C. E. Mead, Manager of the Cotton Research Company, was the speaker.

New York Metropolitan Section

W. H. O'Neill Manning, of the National Institute of Industrial Psychology, London, gave a paper on "The Psychological Approach to Industrial Problems" at the February 17 meeting. The paper gave a detailed account of the aims and technique of the National Institute of Industrial Psychology. An imposing group of discussors made valuable contributions out of their varied experience here. Dr. Donald Laird, of Colgate University, presided.

New York Southern Tier Section

The January meeting was addressed by J. A. Morford, of the National Industrial Conference Board, who discussed the Board's study of various phases of industrial relations. At the February meeting Mr. Hatch, General Manager of the Shepard Electric Crane and Hoist Co., talked on that company's experience with the Bedaux system, giving a case presentation of much interest.

A Service for Industry

Since November, 1925, the Massachusetts Society for Mental Hygiene has been publishing quarterly, under the title *The Human Factor,* "a digest of the best that is being done in personnel work in business and in industry."

Those engaged in the industrial relations field, and especially those with a psychological interest, will find the current literature, conferences and experiments in this field ably summarized in *The Human Factor.*

The Massachusetts Society for Mental Hygiene also maintains a Consulting Bureau which is prepared to furnish information, without cost, on such subjects as vocational tests, vocational guidance, mutual benefit plans, workmen's compensation problems, housing, health service, more efficient methods of handling human problems, etc. The cooperation of their Consulting Editors, a distinguished group of educators, personnel workers and psychologists, enables them to furnish authoritative and up-to-date information on these subjects. Inquiries should be addressed to the Editor, *The Human Factor,* 5 Joy Street, Boston, Mass.

The Regulation of Business[1]

By Ordway Tead[2]

TWO remarkably dispassionate and incisive studies are the Research Reports of the National Industrial Conference Board which deal with the tremendous problem of business regulation. The following quotation from the earlier study regarding the economic conditions which give rise to the necessity for trade association activity indicates also by inference the reasons for the need of explicit public regulatory activity, as it is discussed in the other report under review. Such a statement, sponsored by a strong employers' organization, should be *ipso facto* evidence of its truth and of the severity of the competitive problem.

> In considerable measure the defects of the competitive system are of another type; they do not spring from the

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[1] "Trade Associations, Their Economic Significance and Legal Status." Published by the National Industrial Conference Board, Inc., New York, 1925.

"Public Regulation of Competitive Practices." Published by the National Industrial Conference Board, Inc., New York, 1925.

"Social Control of Business," by John M. Clark. University of Chicago Press, 1926.

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mere shortcomings of law enforcement. They are grounded in the inherent nature of competitive organization and control, and would persist even under the most faultless observance of all the laws in the books. These drawbacks arise from uncoordinated pursuit of competitive advantage. They tend to place small scale producers at an unjustifiable advantage in waging what frequently proves to be an unequal contest with their powerful competitors. They manifest themselves in economic waste and industrial instability. They carry the competitive struggle to destructive lengths. Circumstances such as these provide a sound economic warrant for the pursuit of business cooperation through trade association activity. They point towards the need, for purposes of economic efficiency and industrial stability, and as a means of safeguarding the essential elements of the competitive process, of cooperative activity among trade competitors in various directions.

Whether or not one agrees with all the conclusions reached in the National Industrial Conference Board reports is of little consequence in comparison with the value which is to be obtained from the clear cut discussion of the facts which these volumes contain. Indeed, no one can pretend to an adequate grasp of the whole problem of applying scientific management in American industry and ignore the problems here treated. Every economist and broad gauged business man should be mindful of the tendencies in the size and control of corporations for which they supply the evidence. Certainly it is no longer possible for scientific management to be considered as a factory problem isolated from economic forces of a competitive or of monopolistic character on an industry-wide scale as they are here discussed.

All three of these books have this in common, that they assume the necessity for some degree of public interposition in the conduct of business. But Professor Clark is prepared to go very much farther than is the Conference Board in committing himself as to the necessity for a progressive social control of business. His volume may well be read in the light of the facts offered by the other two books, since his discussion is more philosophical in emphasis than factual. Although this work is by no means easy reading, the careful student is repaid by getting a profound sense of business activity going forward against a background of a growing recognition of a new public interest which is still relatively in its infancy.

Particularly to be commended, from the point of view of broad vision and suggestiveness, is Professor Clark's last chapter, wherein he projects forward in a thoughtful way the likely issue in practical affairs of the forces now at work in determining the size of business enterprises and the character of their organization together by industries.

These three studies comprise a noteworthy addition to the literature of business. They are discussions of a phase of business organization which business men themselves have been reluctant to face, except as they impinge upon their own immediate corporations. They are the phases on which truly scientific thinking seems to come last and slowest in the practical executive's mind. Every scientific management study which helps to define and characterize the severe limitations under which the competitive process inherently works can help to destroy the hold on business men's minds of such now compelling slogans as "less government in business," and "competition is the life of trade."

Reviews

Marketing. By Edmund Brown, Harper & Brother, New York, 1925, pages x, 503.

The college class room continues to be all too great an incentive and limiting factor in the writing of books in the field of business administration. At least it is the reviewer's point of view that this would have been a much more fundamental presentation for the business man if the class room market had been ignored, undesirable or desirable as such an oversight would have been. Two hundred pages, approximately, present the marketing frame-work of fourteen basic trades. Six pages are allotted to a chapter on industrial equipment. Fifteen pages out of five hundred are assigned to the chapter on market analysis. Certainly the executive can increase his understanding of market problems little by reading this book.

On the other hand, the book is a happy statement for the teacher who seeks compromise between the statement of marketing principles solely, and the other extreme—the case method. The book discusses the outstanding phases of market problems, and introduces the reader interestingly to their perplexities. As a text book, it is commended to the teacher for investigation.

As a treatise on marketing, it may be said that too much is assumed by theme in the phrase on page 3—"Why marketing became a science." Nevertheless, the reader will find a clear statement of many problems involved in marketing wheat, flour, steel, textiles, cotton, coffee, coal, fresh and canned foods, tobacco, and wearing apparel. A big task is assumed by him who attempts to define and describe the "process of transferring goods through commercial channels from producer to consumer." Considering the scope of the subject itself, and the range of interests of probable readers, the book should meet with little justifiable criticism, and much commendation.

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